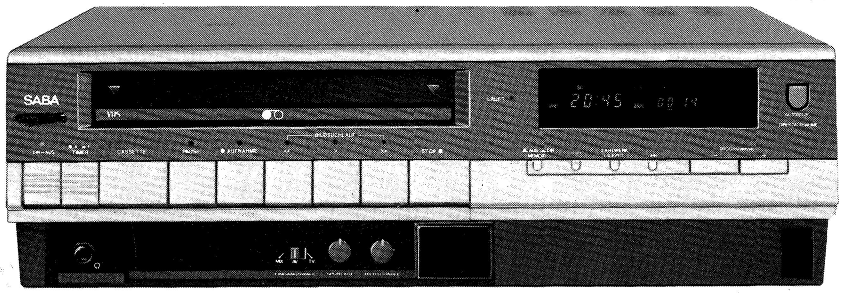
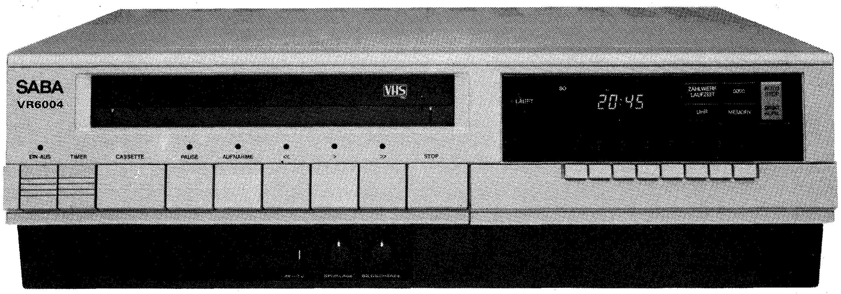
SABA Service-Schaltbilder · Circuit diagrams

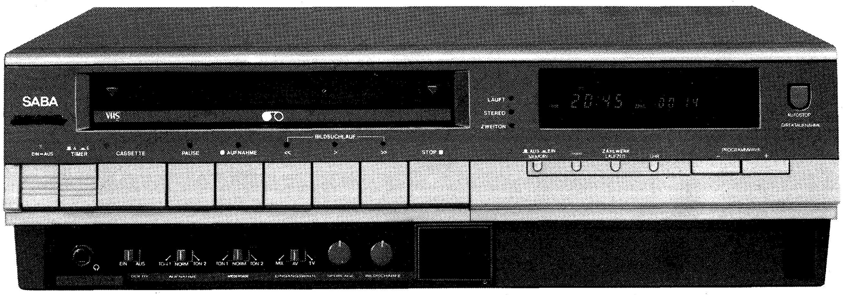
AV 031
AV 033
AV 034

AV 032

ULTRACOLOR Video-Recorder 6004/6004 CT/7004







SABA SERVICE-ORGANISATION Änderungen vorbehalten! Printed in the Fed. Rep. of Germany Best.-Nr. 4900016629 VSO 118330 TFK

Hinweis: Die auf den nachfolgenden Seiten erscheinenden Buchstaben **A, B, C** und **D** sind die Codierung für folgende Geräte:
A = VR 6014/VR 6014 CT/VR 7014; B = VR 6011/VR 6011 CT/VR 7011
C = —— D = VR 6004/VR 6004 CT/VR 7004

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Please note: the letters **A, B, C** and **D** encountered in the text are code-letters identifying the following models:
A = VR 6014/VR 6014 CT/VR 7014; B = VR 6011/VR 6011 CT/VR 7011
C = —— D = VR 6004/VR 6004 CT/VR 7004

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Timer/Presetter circuit board 0 8 Type -A-, -B- 80–81
Regulator circuit board 0 2 80
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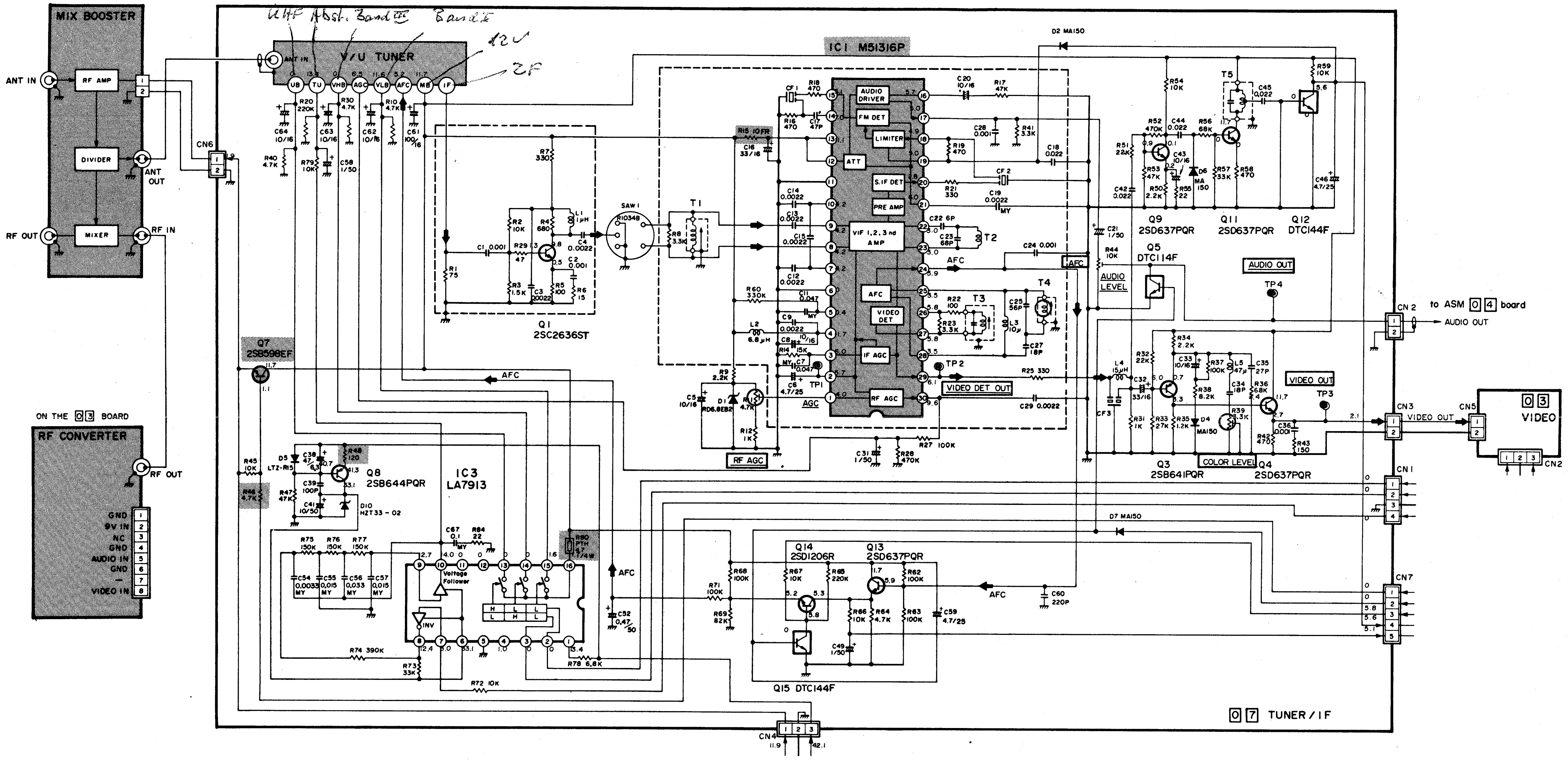
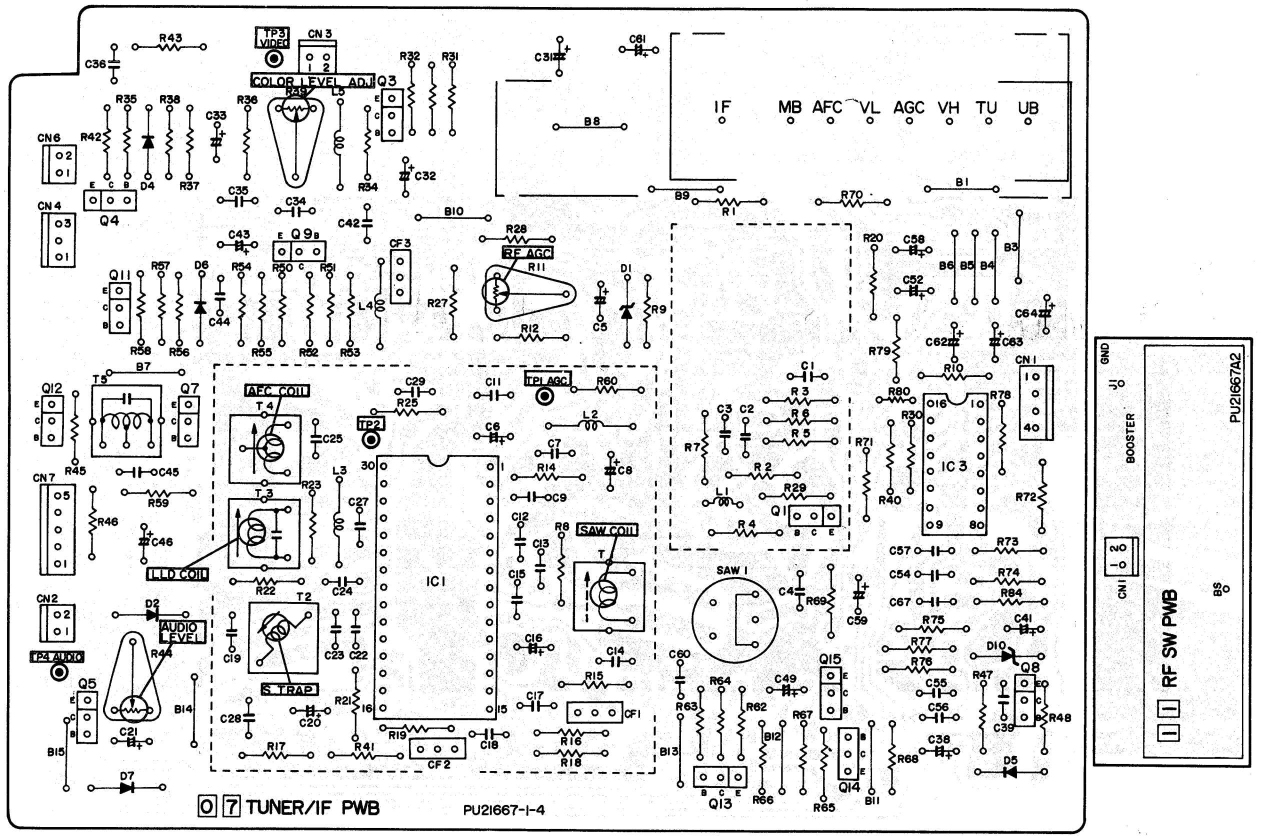
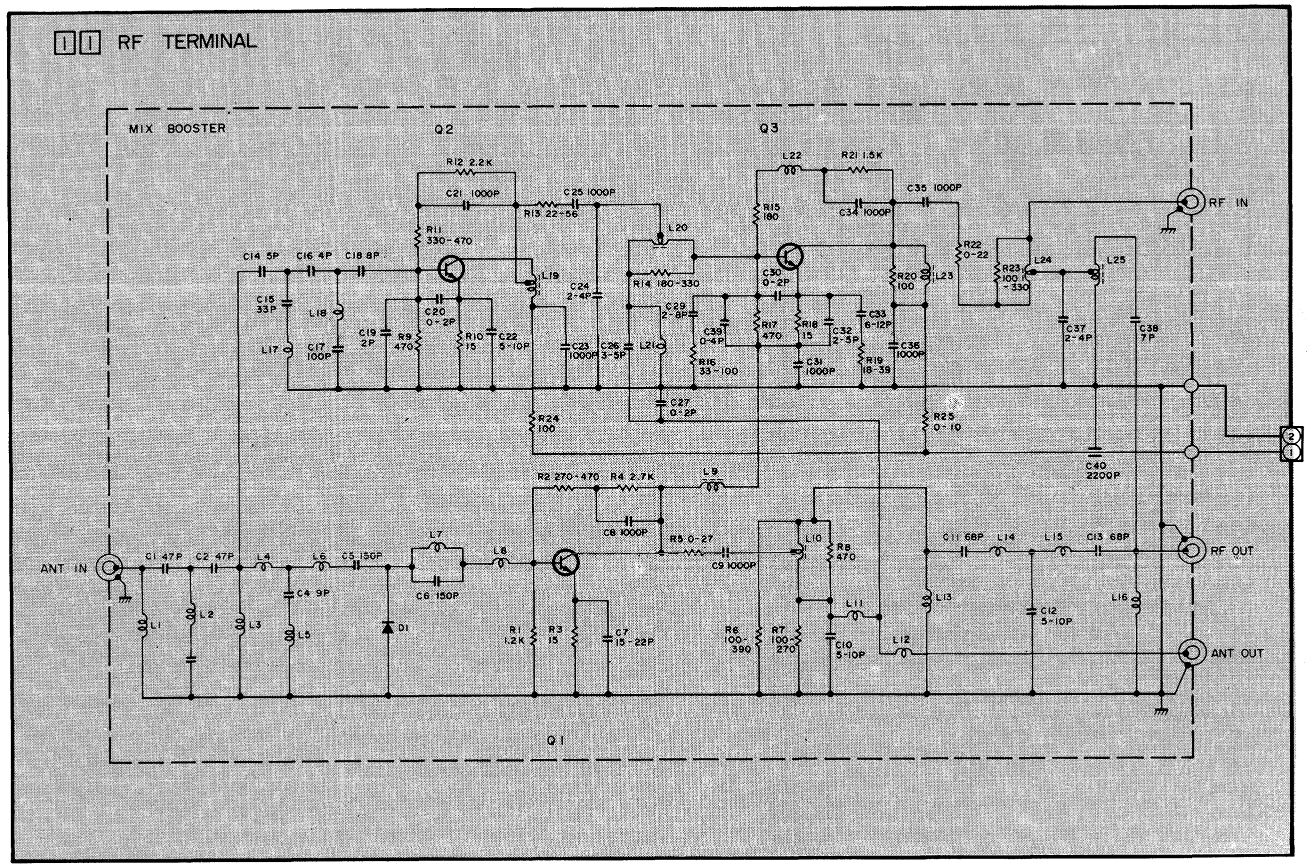
Tuner/ZF-Schaltung · Tuner/IF circuit Typ -B-


MIX BOOSTER
RF AMP
DIVIDER
MIXER
ANT IN
ANT OUT
RF OUT
RF IN
CN6
ON THE 03 BOARD
RF CONVERTER
RF OUT
GND
9V IN
NC
GND
AUDIO IN
GND
VIDEO IN
V/U TUNER
ANT IN
UB
TU
VHB
AGC
VLB
AFC
MB
IF
UHF
Abst.
Band III
Band I
12V
ZF
IC1 M51316P
AUDIO DRIVER
FM DET
LIMITER
ATT
S.IF DET
PRE AMP
VIF 1,2,3 nd AMP
AFC
VIDEO DET
IF AGC
RF AGC
Q1 2SC2636ST
SAW1
T1
T2
T3
T4
T5
Q7 2SB598EF
AFC
IC3 LA7913
Voltage Follower
INV
Q8 2SB644PQR
Q9 2SD637PQR
Q11 2SD637PQR
Q12 DTC144F
Q5 DTC114F
AUDIO LEVEL
AUDIO OUT
TP4
CN2
to ASM 04 board
AUDIO OUT
VIDEO DET OUT
TP1
TP2
TP3
VIDEO OUT
COLOR LEVEL
Q3 2SB641PQR
Q4 2SD637PQR
CN3
VIDEO OUT
CN5
03 VIDEO
CN2
CN1
CN7
D2 MA150
D7 MA150
Q14 2SD1206R
Q13 2SD637PQR
Q15 DTC144F
CN4
07 TUNER / IF

Tuner/ZF-Platte · Tuner/IF circuit board 07 Typ -B-

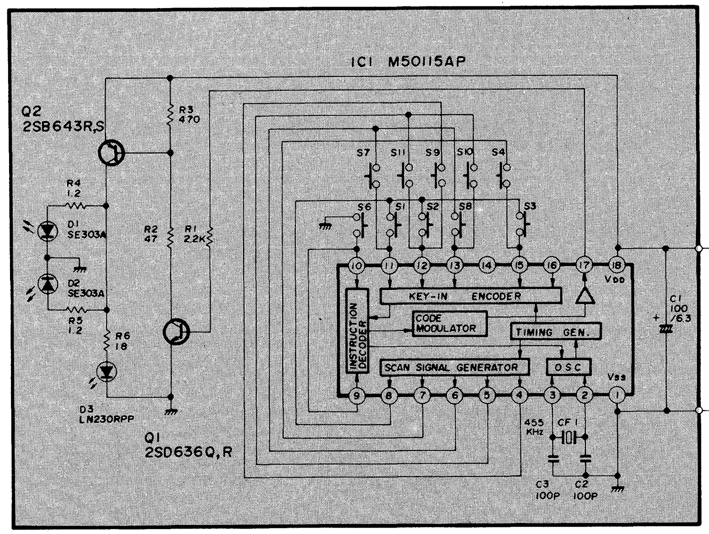

TP3 VIDEO
CN3
COLOR LEVEL ADJ
IF
MB
AFC
VL
AGC
VH
TU
UB
B1
B8
B9
B10
RF AGC
AFC COIL
TP2
TP1 AGC
IC1
IC3
SAW COIL
SAW 1
LLD COIL
AUDIO LEVEL
S.TRAP
TP4 AUDIO
CN1
CN2
CN4
CN6
CN7
07 TUNER/IF PWB
PU21667-1-4
GND
J1
BOOSTER
PU21667A2
CN1
01 RF SW PWB
B8

Antennenverstärker/Mischer-Schaltung · Mix Booster


RF TERMINAL
MIX BOOSTER
Q1
Q2
Q3
ANT IN
RF IN
RF OUT
ANT OUT
GND
12V IN
C40 2200P

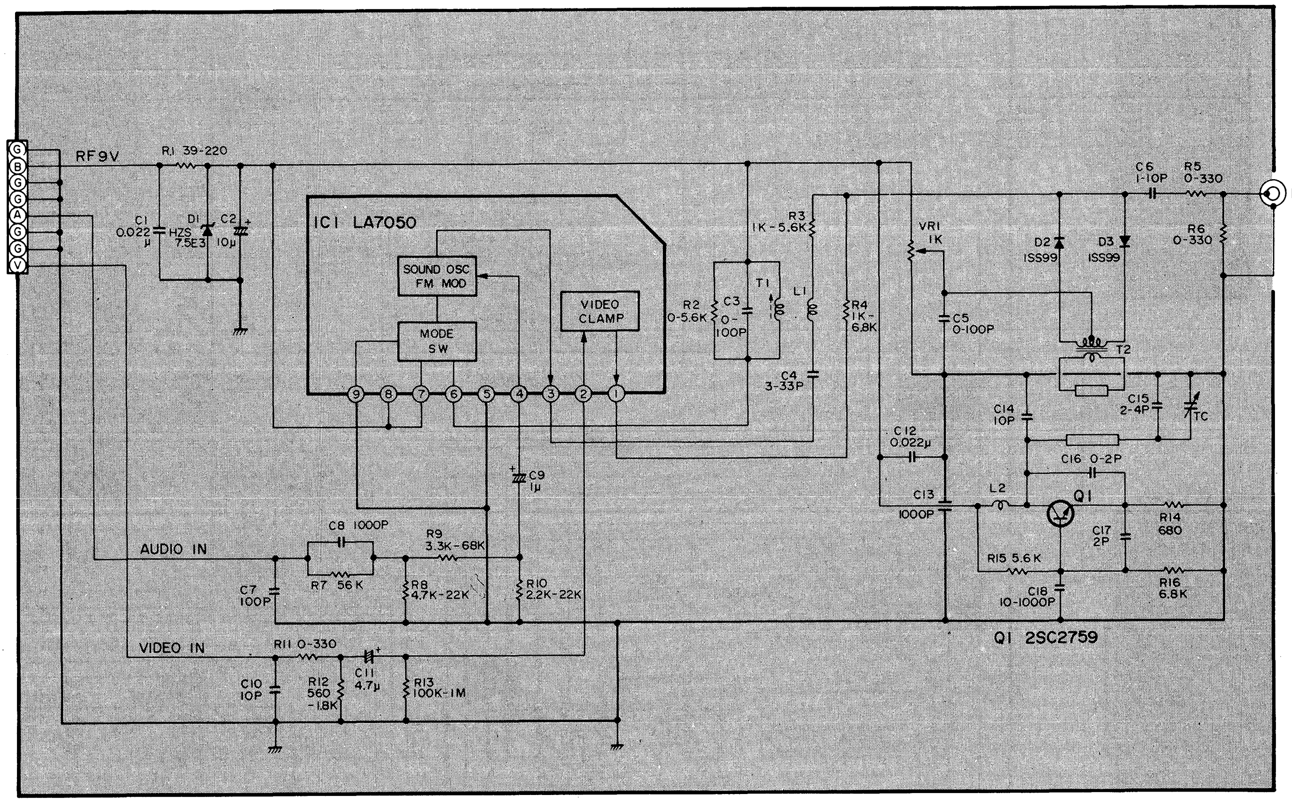
NOTES:
1. Q1, Q2, Q3 : 2SC2570A or 2SC3355 or Equivalent.
2. D1 : 1S2076 or 1S2473 or Equivalent.
3. All resistance values : Ohm
4. All capacitance vales : F

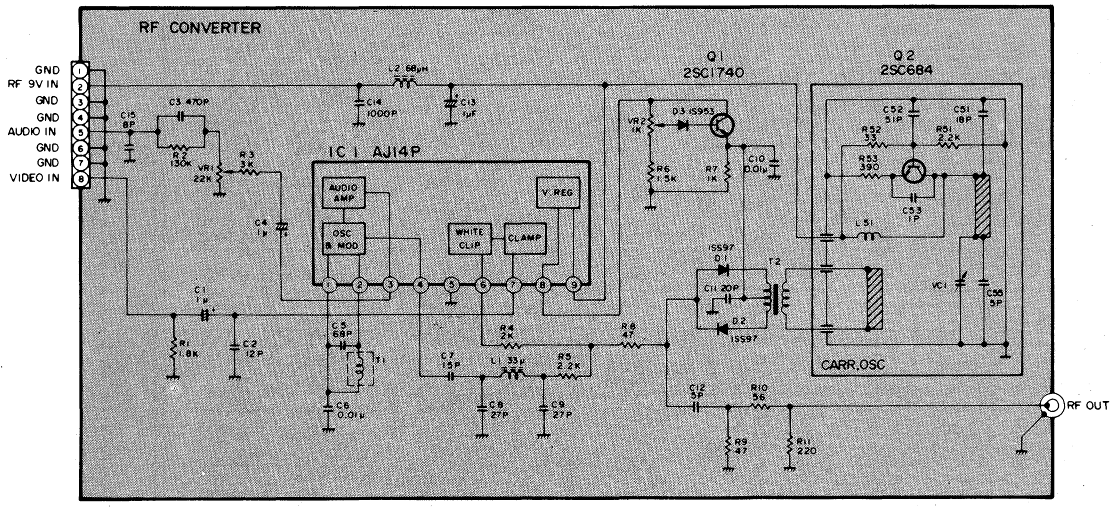
IR-Geber-Schaltung · Remote control circuit


IC1 M50115AP
Q2 2SB643R,S
Q1 2SD636Q,R
D1 SE303A
D2 SE303A
D3 LN230RPP
KEY-IN ENCODER
CODE MODULATOR
TIMING GEN.
SCAN SIGNAL GENERATOR
OSC
INSTRUCTION DECODER
VDD
VSS
455 KHz
CF1
C3 100P
C2 100P
C1 100 /6.3
Battery
1.5V x 2

KEY SW NO	NAME
1	ON
2	OFF
3	CHANNEL +
4	CHANNEL −
5	—
6	REC
7	STOP
8	PAUSE/STILL
9	FF/SHUTTLE
10	FLAY
11	REW/SHUTTLE

HF-Modulator-Schaltungen · RF-Converter circuits


RF9V
IC1 LA7050
SOUND OSC FM MOD
MODE SW
VIDEO CLAMP
AUDIO IN
VIDEO IN
RF OUT
Q1 2SC2759
T1
T2
VR1 1K


RF CONVERTER
GND
RF 9V IN
GND
GND
AUDIO IN
GND
GND
VIDEO IN
IC1 AJ14P
AUDIO AMP
OSC & MOD
WHITE CLIP
CLAMP
V.REG
Q1 2SC1740
Q2 2SC684
CARR.OSC
RF OUT

NOTE:
1. UNIT. Resistor/Capacitor/F. Inductor/H
2. Compatible Transistors and Diodes
Q1. 2SC454, 2SC945, 2SC1815
D1,2. 1SS98, 99, 1SS88
D3. 1S133, 1SS91, 1S1555

Technische Daten:

Systemdaten

Fernsehnorm	CCIR – 625 Zeilen – PAL
Aufzeichnungsart	VHS-PAL (Schrägaufzeichnung)
Videoband	1/2" cassettiert
Bandgeschwindigkeit	23,39 mm/sec (± 0,5 %)
Aufzeichnungsdauer	max. 4 Std.

Mechanische Daten

Abmessungen (B×H×T)	435×130×368 mm
Gewicht Typ A	97 N (ca. 9,5 kg)
Gewicht Typ B, C	92 N (ca. 9 kg)
zul. Umgebungstemperatur	278 . . . 313 K (+5 . . . +40°C)
Betriebslage	waagerecht

Anschlußdaten

Netzanschluß	220 V, 50/60 Hz
Leistungsaufnahme	
Typ A	35 Watt
Typ B	32 Watt
Typ C	30 Watt
Antenneneingang	DIN 45325 (koaxial 75 Ω) Band I: VHF-Kanäle 2 . . . 4 (Kabeltuner: 47–118 MHz) Band III: VHF-Kanäle 5 . . . 12 (Kabeltuner: 118–300 MHz) Band U: UHF-Kanäle 21 . . . 69
Antennenausgang	DIN 45325 (koaxial 75 Ω)
Antennenausgangsfrequenz	591,25 MHz ≙ K 36 (± 4 Kanäle)
Audio-Anschluß	
Eingang	– 20 dB/50 kΩ ≙ 77,5 mV/ 50 kΩ unsymmetrisch
Ausgang	– 6 dB/1 kΩ ≙ 388 mV/ 1 kΩ unsymmetrisch
Frequenzbereich	70 Hz – 10000 Hz
Signal/Rauschverhältnis	≧ 40 dB (mit eingeschalteter Rauschunterdrückung)
Video-Anschluß	
Eingang	1 Vss ± 6 dB/75 Ω
Ausgang	1 Vss/75 Ω
Signal/Rauschverhältnis	≧ 43 dB (Bildschärfeeinsteller in Mittelstellung)
Auflösung (horizontal)	≧ 250 Zeilen ≙ 3 MHz (Bildschärfeeinsteller in Mittelstellung)

Schaltuhr Typ A, B

Display	Fluoreszenz-Digital-Anzeige
Synchronisation	Quarz-Oszillator
Uhrzeit	24-Std.-Anzeige, Sekundenangabe, Tagesangabe
Vorprogrammierzeitraum	14 Tage
Anzahl der Speicherplätze	für max. 8 verschiedene Programme
Vorprogrammierarten	Ein- und Ausschalten, tägliches u. wöchentliches Wiederholen

Schaltuhr Typ C, D

Display	Fluoreszent-Digital-Anzeige
Synchronisation	Quarz-Oszillator
Vorprogrammierzeitraum	14 Tage
Vorprogrammierarten	Ein- und Ausschalten 1× oder tägliches Wiederholen

Allgemeine Hinweise

1. Zum Austausch oder Entlöten von Bauteilen Gerät vom Netz trennen.
2. Bei der Demontage mechanischer Teile ist darauf zu achten, daß keine Schrauben oder Kleinteile ins Laufwerk fallen, anderenfalls sind diese vor Wiederinbetriebnahme zu entfernen.
3. Während des Arbeitens an der Mechanik ist sorgfältig darauf zu achten, Beschädigungen sowohl der oberen als auch der unteren Kopftrommeleinheit zu vermeiden.
4. Die Mechanik des Bandlaufwerks wurde im Werk präzise eingestellt und bedarf im Normalfall keiner Nachjustage.
5. Beim Austausch von Teilen sind Beschädigungen und Dejustagen anderer Komponenten sorgfältig zu vermeiden. Dabei ist besonders auf die Bandführungsbolzen und die rotierenden Videoköpfe zu achten.
6. Die Cassettenfahrstuhl-Mechanik ist in den aktuellen Geräten derart geändert worden, daß es bei unvorsichtigem Auslösen des Einfahrvorganges zu Verletzungen der Finger oder der Hand kommen kann. Bei diesen Geräten darf das „Auslösen" des Einfahrvorganges, nicht wie bei den Vorgängermodellen, per Finger erfolgen. Die genauen Anweisungen für den Service sind der Einstellanweisung für die Mechanik zu entnehmen.
7. Zur Vermeidung von Gehäusebeschädigungen sind die Gehäuseschrauben sorgfältig anzuziehen.

Technical specifications:

System Data

TV Standard	*CCIR – 625 lines – PAL*
Recording system	*VHS-PAL (helical scanning)*
Video tape	*1/2" (cassette)*
Tape speed	*23,39 mm/sec. (± 0,5 %)*
Recording time	*max. 4 hours*

Mechanical Data

Dimensions (W × H × D)	*435×130×368 mm*
Weight Type A	*97 N (approx 9,5 kg)*
Weight Type B, C	*92 N (approx 9 kg)*
Ambient temperature	*278 . . . 313 K (+5 . . . +40°C)*
Operating position	*horizontal*

Connection Data

Mains connection	*220 V, 50/60 Hz*
Power consumption	
Type A	*35 Watts*
Type B	*32 Watts*
Type C	*30 Watts*
Aerial input	*DIN 45325 (Coaxial 75 Ohm)* *Band I: VHF Channels 2 . . . 4* *(Tuner CTV: 47–118 MHz)* *Band III: VHF Channels 5 . . . 12* *(Tuner CTV: 118–300 MHz)* *Band U: UHF Channels 21 . . . 69*
Aerial output	*DIN 45325 (Coaxial 75 Ohm)*
Aerial output frequency	*591,25 MHz ≙ K 36 (± 4 channels)*
Audio connection	
Input	*– 20 dB/50 kΩ ≙ 77,5 mV/50 kΩ unbalanced*
Output	*– 6 dB/1 kΩ ≙ 388 mV/1 kΩ unbalanced*
Frequency range	*70 Hz – 10000 Hz*
Signal/Noise ratio	*≧ 40 dB (Noise reduction on)*
Video connection	
Input	*1 Vp-p ± 6 dB/75 Ω*
Output	*1 Vp-p/75 Ω*
Signal/Noise ratio	*≧43 dB (with Picture Sharpness control at centre position)*
Picture resolution (horizontal)	*≧ 250 lines ≙ 3 MHz (with Picture Sharpness control at centre position)*

Digital Clock Type A, B

Display	*Fluorescent digital display*
Synchronisation	*Quartz Oscillator*
Time Display	*24 hours display,* *second and day indicator*
Programming range	*14 days*
Number of storage banks	*max. 8 programmes*
Pre-set modes	*On and Off,* *daily and weekly repeat functions*

Digital Clock Type C, D

Display	*Fluorescent digital display*
Synchronisation	*Quartz Oscillator*
Programming range	*14 days*
Pre set modes	*On and Off switch once* *or daily repeat function*

Precautions

1. *Disconnect from power before removing or soldering components.*
2. *When removing a screw from the chassis, be careful not to drop it into the mechanism. If a screw should be dropped, be sure to retrieve it.*
3. *Be extremely careful not to damage either the upper or lower head drum assemblies.*
4. *The tape transport mechanism has been precisely adjusted at the factory and ordinarily does not require readjustment.*
5. *When removing a part, be very careful not to damage or displace other parts. (Be especially careful with the guide poles and rotary video head drum.)*
6. *The cassette housing retracting mechanism presents a hazard of possible injury to fingers or hand due to the differing construction with respect to earlier models. The technique of "tripping" the lowering mechanism with the fingers, as employed with previous versions, must not be used with this model. For the instructive service procedure, see in mechanical adjustments manual.*
7. *Tighten the screws carefully to avoid damage to the cabinet.*

Ausbauhinweise

A: Gehäuseteile

Disassembly

A: External covers

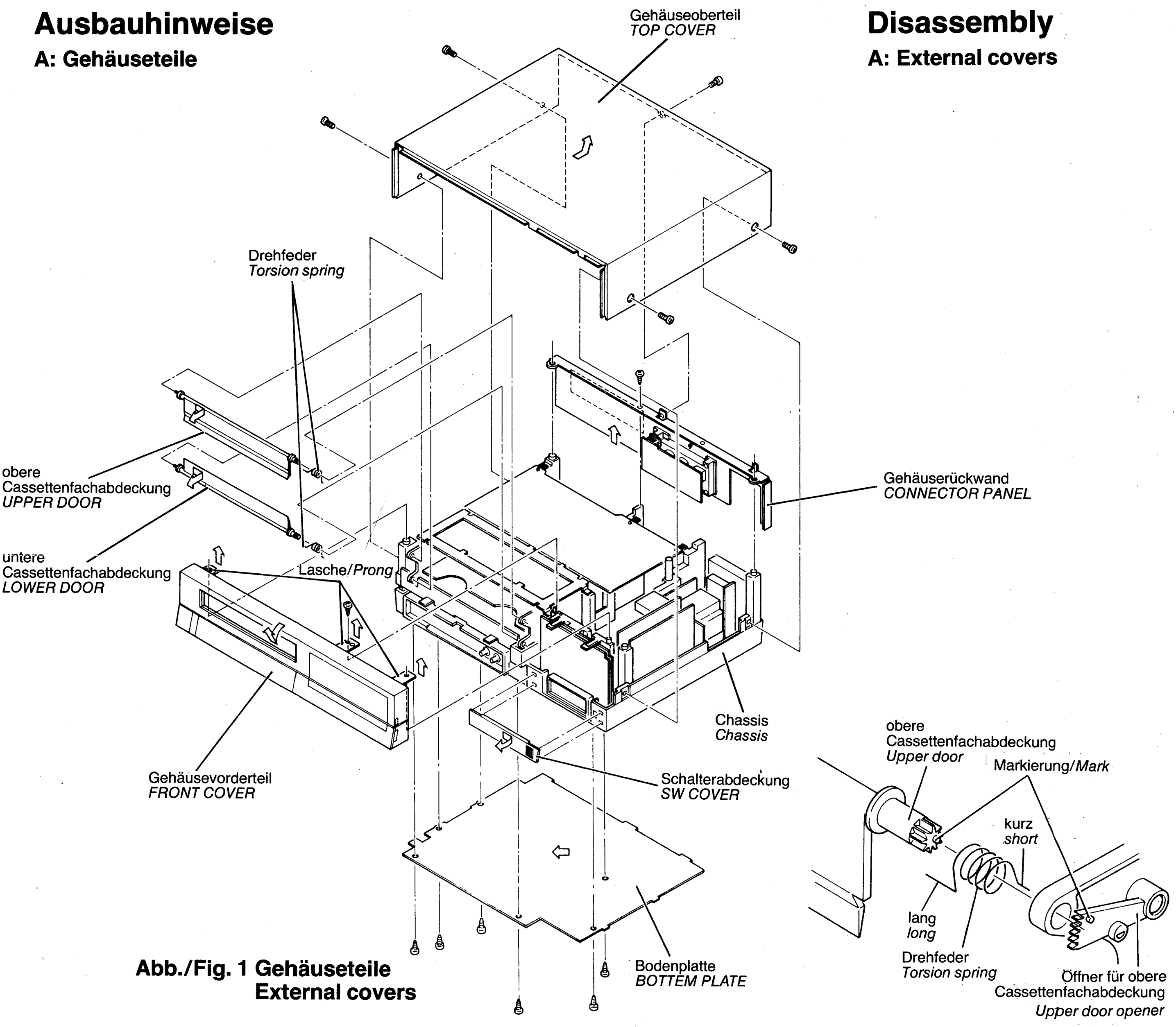

Gehäuseoberteil
TOP COVER
Drehfeder
Torsion spring
obere
Cassettenfachabdeckung
UPPER DOOR
untere
Cassettenfachabdeckung
LOWER DOOR
Lasche/Prong
Gehäuserückwand
CONNECTOR PANEL
Chassis
Chassis
Gehäusevorderteil
FRONT COVER
Schalterabdeckung
SW COVER
Bodenplatte
BOTTEM PLATE
obere
Cassettenfachabdeckung
Upper door
Markierung/Mark
kurz
short
lang
long
Drehfeder
Torsion spring
Öffner für obere
Cassettenfachabdeckung
Upper door opener

**Abb./Fig. 1 Gehäuseteile
External covers**

B: Lage der Leiterplatten

- **Gehäuseoberteil**
  1. Fünf Schrauben herausdrehen und das Gehäuseoberteil in Richtung des Pfeiles abnehmen.
- **Gehäusevorderteil**
  1. Das Gehäuseoberteil abnehmen.
  2. Eine Schraube herausdrehen und die drei Laschen nach oben ziehen um sie vom Chassis zu lösen.
  3. Das Gehäusevorderteil in Richtung des Pfeiles abnehmen.
- **Bodenplatte**
  1. Sechs Schrauben herausdrehen und die Bodenplatte zum Abnehmen in Richtung des Pfeiles bewegen.
- **Gehäuserückwand**
  1. Das Gehäuseoberteil abnehmen.
  2. Eine Schraube herausdrehen und die Gehäuserückwand zum Herausnehmen nach oben ziehen.
- **Obere und untere Cassettenfachabdeckung**
  1. Das Gehäusevorderteil abnehmen.
  2. Die untere Cassettenfachabdeckung in Pfeilrichtung bewegen und herausnehmen, dabei auf die Drehfeder achten.
  3. In der gleichen Weise wird die obere Cassettenfachabdeckung in Pfeilrichtung herausgenommen. Auch hierbei auf die Drehfeder achten.
  4. Beim Wiedereinsetzen der Cassettenfachabdeckung ist folgendermaßen vorzugehen:
     1) Die Markierung auf dem gezahnten Teil der oberen Cassettenfachabdeckung beachten.
     2) Die Drehfeder so aufsetzen, daß der lange gerade Teil der Drehfeder in Richtung der oberen Cassettenfachabdeckung zeigt.
     3) Die obere Cassettenfachabdeckung so einsetzen, daß sich die Markierungen auf der Abdeckung und dem Öffner für die Abdeckung in gleicher Lage befinden.
- **Schalter-Abdeckung**
  1. Zum Abnehmen die Schalterabdeckung in Pfeilrichtung bewegen.

B: Circuit board assemblies

- **Top cover**
  1. *Take out five screws and move the top cover in the arrow direction to remove it.*
- **Front cover**
  1. *Remove the top cover.*
  2. *Take out a screw and pull the three prongs upwards to disengage from chassis.*
  3. *Move the front cover in the arrow direction to remove it.*
- **Bottom plate**
  1. *Take out six screws and move the bottom plate in the arrow direction to remove it.*
- **Connector panel**
  1. *Remove the top cover.*
  2. *Take out a screw and pull the connector panel upwards to remove it.*
- **Upper door and lower door**
  1. *Remove the front cover.*
  2. *Move the lower door in the arrow direction to remove it. Use care regarding the torsion spring.*
  3. *In the same manner, move the upper door in the arrow direction to remove it. Use care regarding the torsion spring.*
  4. *When reassemble the doors, perform the following*
     1) Observe the upper door and recognize the mark on the gear portion.
     2) Set the long straight part of the torsion spring toward the upper door.
     3) Install the upper door in the state with the mark corresponding with the mark of the upper door opener on the cassette housing.
- **SW cover**
  1. *Move the SW cover in the arrow direction to remove it.*

B: Lage der Leiterplatten

B: Circuit board assemblies

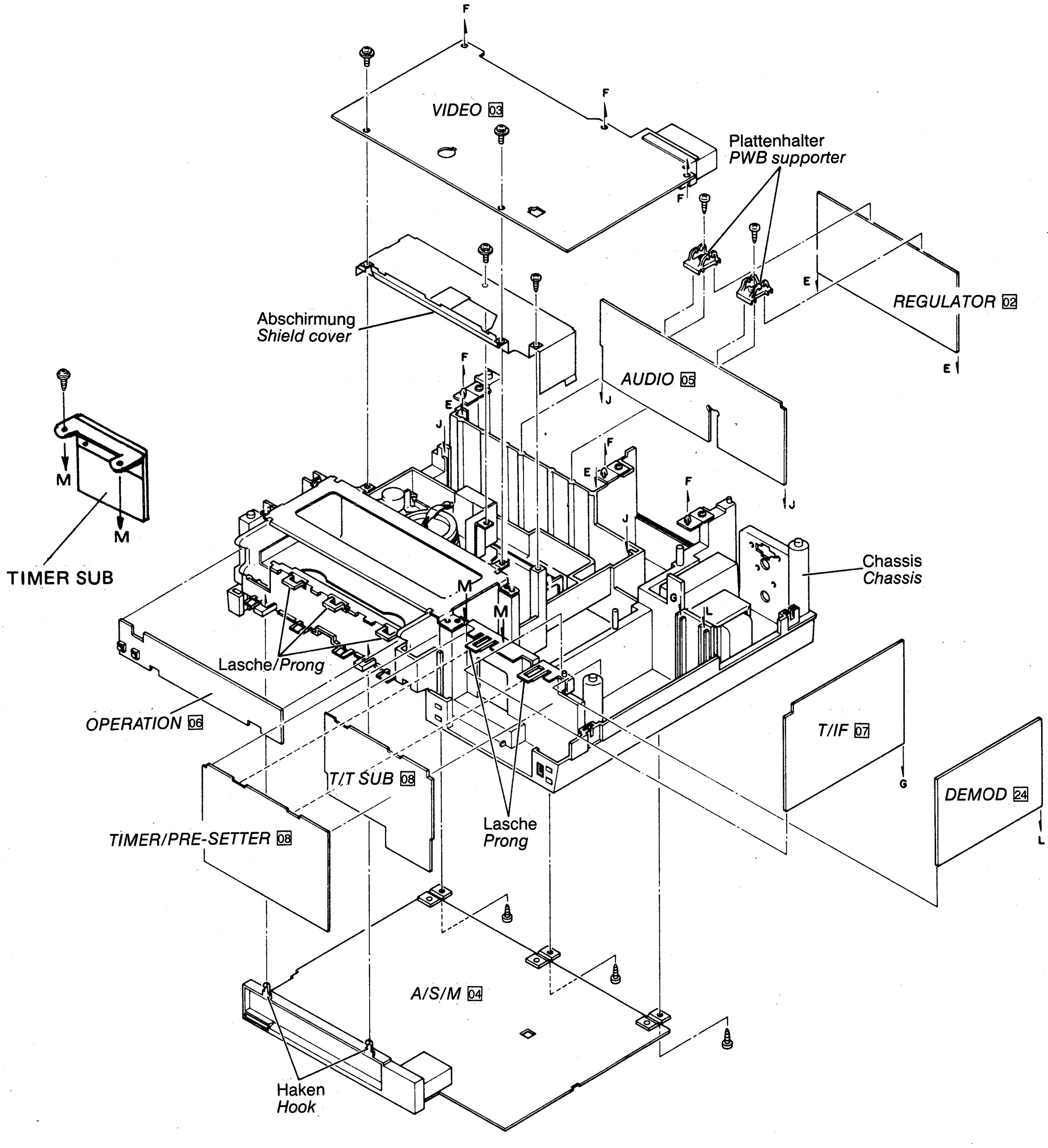

F
VIDEO 03
F
Plattenhalter
PWB supporter
F
E
REGULATOR 02
E
Abschirmung
Shield cover
F
E
J
AUDIO 05
J
F
E
F
J
J
M
M
TIMER SUB
Chassis
Chassis
M
M
G
L
Lasche/Prong
OPERATION 06
T/IF 07
G
T/T SUB 08
DEMOD 24
L
TIMER/PRE-SETTER 08
Lasche
Prong
A/S/M 04
Haken
Hook

**Abb./Fig. 2 Leiter-Platten
Circuit boards**

- **Videoplatte 03**
  1. Zwei Schrauben herausdrehen und die drei Scharniere aushaken, dann kann die Videoplatte aus dem Gerät herausgenommen werden.
- **Regelnetzteilplatte 02 und Audioplatte 05**
  1. Zwei Schrauben herausdrehen und die Plattenhalter entfernen.
  2. Die Regelnetzteilplatte nach oben ziehen, daß sie von den Führungsstützen freikommt und herausnehmen.
  3. In gleicher Weise wird die Audioplatte herausgenommen.
- **Bedienteil-Platte 06**
  1. Drei Laschen nach oben biegen und die Bedienteil-Platte herausnehmen.
- **A/S/M-Platte 04**
  1. Die Bedienteilplatte herausnehmen.
  2. Die beiden Haken an der A/S/M-Platte aushaken um sie von dem Chassis zu lösen.
  3. Drei Schrauben herausdrehen und die A/S/M-Platte herausnehmen.
- **Timer-Einsteller- und T/T-Zusatzplatte 08**
  1. Die beiden Laschen am Chassis nach oben biegen und die Timer-Einsteller- und T/T-Zusatzplatte herausnehmen.
- **Tuner/ZF- 07 und Demodulator-Platte 24**
  1. Die Tuner/ZF-Platte soweit nach oben ziehen bis sie von den Führungsstützen des Chassis freikommt und herausnehmen.
  2. Auf die gleiche Weise wird die Demodulatorplatte herausgenommen.

- **VIDEO board 03**
  1. *Take out two screws and disengage the VIDEO board from three hinges mounted on chassis to remove it.*
- **REGULATOR 02 and AUDIO 05 boards**
  1. *Take out two screws and remove the PWB supportors.*
  2. *Pull the REGULATOR board upwards from guides of chassis to remove it.*
  3. *In the same manner, remove the AUDIO board.*
- **OPERATION board 06**
  1. *Bend three prongs of chassis upwards to remove the OPERATION board.*
- **A/S/M board 04**
  1. *Remove the OPERATION board.*
  2. *Bend two hooks of A/S/M board to disengage them from chassis.*
  3. *Take out three screws and remove the A/S/M board.*
- **TIMER/PRE-SETTER and T/T SUB boards 08**
  1. *Bend two prongs of chassis upwards to remove the TIMER/PRE-SETTER and T/T SUB boards.*
- **T/IF and DEMOD boards 24**
  1. *Pull the T/IF board upwards from guides of chassis to remove it.*
  2. *In the same manner, remove the DEMOD board.*

Lage wichtiger mechanischer Teile

A: Draufsicht und Teilebezeichnung

Layout of main mechanical parts

A: Top view and parts identifications

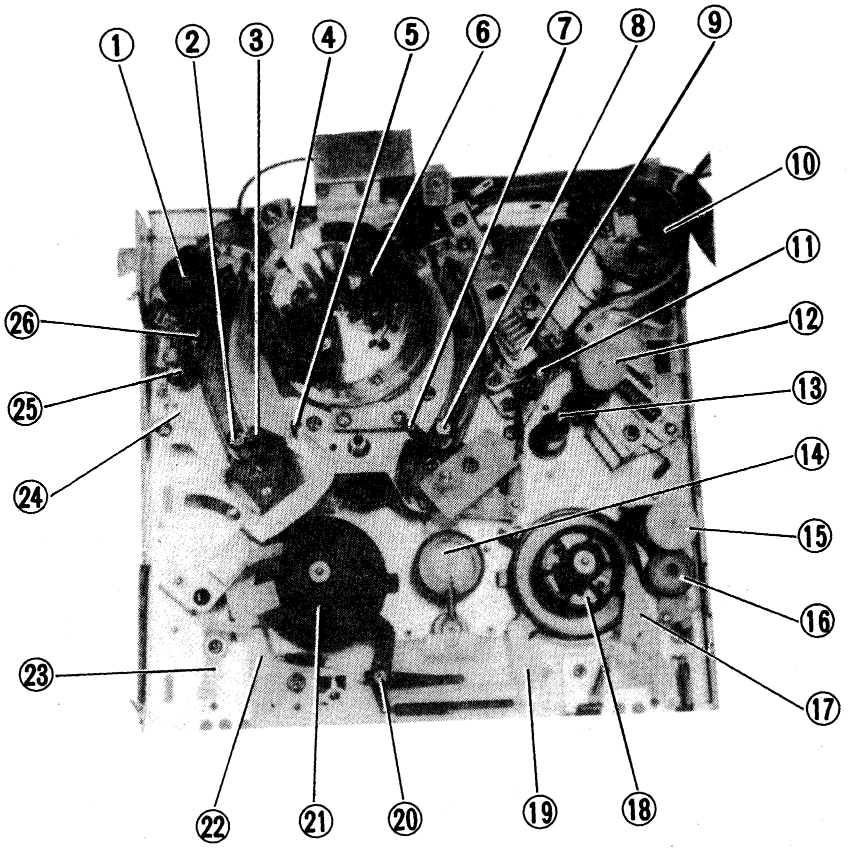


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Abb./Fig. 3

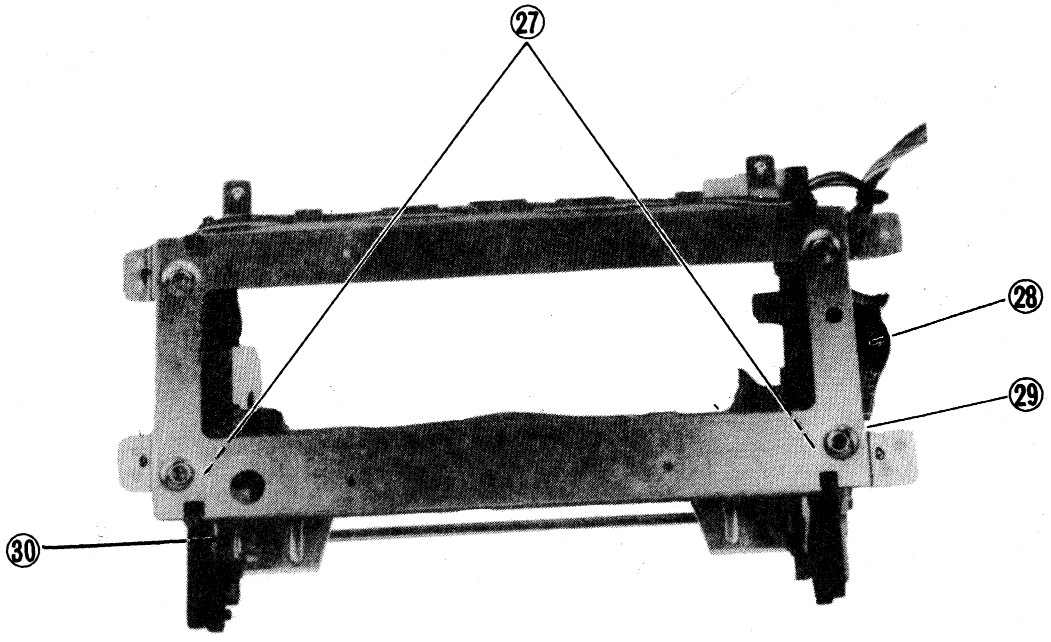


Abb./Fig. 4

B: Unteransicht und Teilebezeichnung

B: Bottom view and parts identification

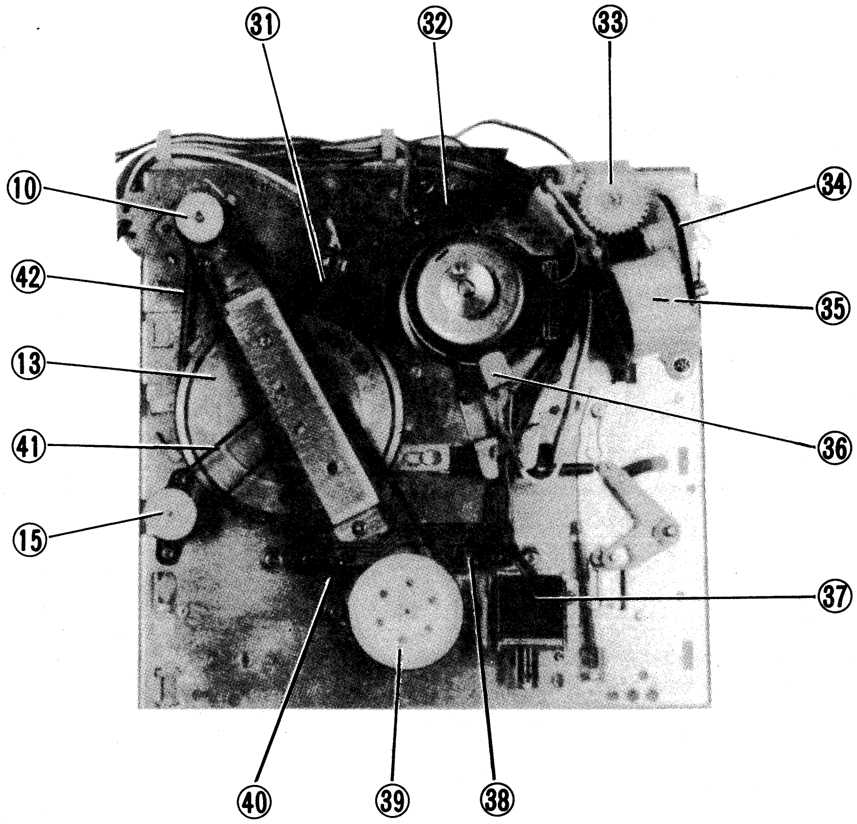


Abb./Fig. 5

1	Spannrolle	1	*Impedance roller*
2	Abwickelführungsrolle	2	*Supply guide roller*
3	Schrägführungsbolzen (Grundplatte für Abwickelführungsstift)	3	*Slant pole (Supply pole base ass'y)*
4	Bürsteneinheit	4	*Brush*
5	Fühlhebelstift	5	*Tension pole*
6	Obere Kopftrommel	6	*Upper drum*
7	Schrägführungsbolzen (Grundplatte für Aufwickelführungsstift)	7	*Slant pole (Take-up pole base ass'y)*
8	Aufwickelführungsrolle	8	*Take-up guide roller*
9	Audio/Kontrollkopf	9	*Audio/control head*
10	Bandantriebsmotor (-Antriebsrad)	10	*Capstan motor (-pulley)*
11	Aufwickelführungsstift	11	*Take-up guide pole*
12	Gummiandruckrolle	12	*Pinch roller*
13	Bandantriebswelle (mit Schwungmasse)	13	*Capstan (Flywheel ass'y)*
14	Wickelzwischenrad	14	*Reel idler*
15	Aufwickelkupplung	15	*Take-up clutch*
16	Hebel für Aufwickelzwischenrad	16	*Take-up idler arm*
17	Aufwickel-Bandzugbremse	17	*Take-up tension brake*
18	Aufwickelspulenteller	18	*Take-up reel disk*
19	Aufwickelbremse	19	*Take-up brake*
20	Abwickelbremse	20	*Supply brake*
21	Abwickelspulenteller	21	*Supply reel disk*
22	Abwickel-Bandzugbremse	22	*Supply tension brake*
23	Bandzugbremsband	23	*Tension band*
24	Führungsstift	24	*Guide pin*
25	Abwickelführungsstift	25	*Supply guide pole*
26	Gesamtlöschkopf	26	*Full erase head*
27	Auswerteschalter „Cassette eingelegt“	27	*CASSETTE-IN detect switch*
28	Motor für Cassettenfahrstuhl	28	*Cassette motor*
29	Auswerteschalter „Cassettenfahrstuhl oben/unten“	29	*HOUSING-UP/DOWN detect switch*
30	Schalter für Aufnahmesicherung	30	*REC SAFETY switch*
31	Frequenzgenerator-Platte	31	*FG board*
32	Federschalter („Entladen“ und „Nach Einfädeln“)	32	*Leaf switch (UL switch and AL switch)*
33	Einfädelgetriebe	33	*Drive gear*
34	Einfädelriemen	34	*Loading belt*
35	Einfädelmotor	35	*Mode control motor*
36	Magnet-Abtastkopf	36	*Pick-up head*
37	Elektromagnet	37	*Solenoid*
38	Platte für Spulentellersensor	38	*REEL SENSOR board*
39	Hauptzwischenrad	39	*Center pulley*
40	Riemen für Wickelrad	40	*Reel belt*
41	Riemen für Aufwickelkupplung	41	*Take-up clutch belt*
42	Riemen für Bandantrieb	42	*Capstan belt*

Wartungs- und Service-Hinweise

Wartungsplan

Folgende Teile sollten zur Aufrechterhaltung der vollen Funktionsfähigkeit des Videorecorders in den angegebenen Zeitintervallen gereinigt werden.

1. Reinigung

Zur Reinigung ist ein alkoholgetränktes fusselfreies Tuch oder Gaze zu verwenden (Industriealkohol).

A: Bandlaufsystem

1. Die nachstehend genannten Teile sind jeweils nach 500 Betriebsstunden zu reinigen.

1) Bandführungsstift
2) Fühlhebelstift
3) Abwickelführungsstift
4) Gesamtlöschkopf
5) Spannrolle
6) Abwickelführungsrolle
7) Abwickel-Schrägführungsbolzen
8) Videoköpfe und Kopftrommel
9) Oberer Bandführungsteil des Kopftrommelunterteils
10) Bürsteneinheit
11) Aufwickel-Schrägführungsbolzen
12) Aufwickelführungsrolle
13) Audio/Kontrollkopf und Audio-Löschkopf
14) Aufwickelführungsstift
15) Gummiandruckrolle
16) Bandantriebswelle

2. Da die zuvor angeführten Teile direkt mit dem Videoband in Kontakt kommen, neigen sie dazu, Staubpartikel aufzunehmen. Wird der Staub über eine längere Zeit nicht entfernt, kann dies eine Beschädigung des Videobandes und der oben genannten mechanischen Teile zur Folge haben.

3. Nach dem Reinigen der Teile mit Alkohol, diese Teile erst abtrocknen lassen und dann erst die Bandcassette einsetzen. Alkohol kann das Videoband zerstören.

Achtung!
Beim Reinigen der beiden, an der oberen Kopftrommel befestigten, Videoköpfe darauf achten, daß NICHT in vertikaler Richtung gewischt wird. Beim Reinigen nur in Bandlaufrichtung (horizontal) und ohne Druck hin und her wischen, dabei sehr sorgfältig verfahren, weil sonst die Videoköpfe leicht beschädigt werden können.

Zum Reinigen der Videoköpfe, des Audio-/Kontroll-Kopfes und der Löschköpfe ein alkoholgetränktes, fusselfreies Tuch benutzen.

B: Spulentellerantriebssystem

1. Die nachstehend aufgeführten Teile sind jeweils nach 1000 Betriebsstunden zu reinigen.

– Chassisoberseite –
17) Hauptzwischenrad
18) Wickelzwischenrad
19) Abwickelspulenteller
20) Abwickelzugbremse
21) Aufwickelspulenteller
22) Aufwickelzugbremse
23) Aufwickelkupplung
24) Aufwickelzwischenrad

– Chassisunterseite –
25) Bandantriebsmotor
26) Bandantriebsriemen
27) Capstanschwungmasse
28) Riemen für Aufwickelkupplung
29) Aufwickelkupplung
30) Einfädelgetriebe
31) Riemen für Einfädelung
32) Einfädelmotor
33) Riemen für Wickelrad
34) Hauptzwischenrad

2. Die oben angeführten rotierenden Teile sind aus Gummi oder kommen mit Teilen aus Gummi in Kontakt und neigen dazu, Gummistaub anzuziehen und anzusammeln. Wird der Staub über eine längere Betriebszeit nicht entfernt, so wird dadurch die Funktion dieser Teile beeinträchtigt.

3. Beim Reinigen der Gummiteile ist ein übermäßiger Einsatz von Alkohol zu vermeiden.

2. Schmierung

Die nachstehend angeführten Teile sind alle 2000 Betriebsstunden mit harz- und säurefreiem Öl zu ölen:

Die Welle des Abwickelspulentellers.
Die Welle des Aufwickelspulentellers.

Nach dem Reinigen der vorerwähnten Wellen mit Alkohol sind diese mit ein oder zwei Tropfen Öl zu versehen.

Achtung: Nicht zuviel Öl auftragen.

Periodic Maintenance

The following procedures are recommended for maintaining optimum performance and reliability of this video cassette recorder.

1. Cleaning

For cleaning, use a lint-free cloth or gauze dampened with alcohol.

A: Tape transport system

1. The following components should be cleaned after every 500 hours of use.

1) Tape guide pin
2) Tension pole
3) Supply guide pole
4) Full erase head
5) Impedance roller
6) Supply guide roller
7) Supply slant pole (Supply pole base assembly)
8) Video head and Drum system
9) Upper surface of drum shaft (Lower drum assembly)
10) Brush
11) Take-up slant pole (Take-up pole base assembly)
12) Take-up guide roller
13) Audio/control head and Audio erase head
14) Take-up guide pole
15) Pinch roller
16) Capstan

2. Since above parts come in direct contact with video tape, they tend to collect dust particles. If allowed to accumulate, dust may lead to damage to the video tape and above parts.

3. After cleaning with alcohol, allow the parts to dry thoroughly before using a cassette tape.

Note!
When cleaning the two video heads on the upper drum, do not clean them with a vertical stroke. Use only a gentle back and forth motion in the direction of the tape path. Use care since they are easily damaged. When cleaning video heads, A/C head and erase heads, use a lint-free cloth dampened with alcohol.

B: Reel drive system

1. The following components should be cleaned after every 1,000 hours of use.

– Upper section –
17) Center pulley
18) Reel idler
19) Supply reel disk
20) Supply brake
21) Take-up reel disk
22) Take-up brake
23) Take-up clutch
24) Take-up idler

– Bottom section –
25) Capstan motor
26) Capstan belt
27) Capstan flywheel
28) Take-up clutch belt
29) Take-up clutch
30) Driver gear
31) Loading belt
32) Mode control motor
33) Reel belt
34) Center pulley

2. The above revolving parts are of rubber or come in direct contact with rubber parts. Rubber dust can accumulate and interfere with proper operation.

3. Avoid using excessive alcohol when cleaning rubber parts.

2. Lubrication

The following components should be lubricated with oil after every 2,000 hours of use.

Shaft of the supply reel disk.
Shaft of the take up reel disk.

After cleaning above shafts with alcohol, lubricate these shafts with one or two drops of oil.

Note: *Do not over lubricate.*

3. Wartungstabelle der wichtigsten mechanischen Teile

In der nachfolgenden Tabelle sind die Teile des Gerätes, die periodisch auszuwechseln sind und die entsprechenden Zeitintervalle aufgeführt.

In der Tabelle 1 sind die ungefähren Zeiten angegeben, nach denen man das Auswechseln besonders kritischer Teile vornehmen sollte. In der Praxis jedoch können diese Zeiten, abhängig von Umwelteinflüssen und Einsatzbedingungen, ziemlich stark variieren. Außerdem wird die Gerätelebensdauer stark beeinflußt durch ständige Wartung und Inspektionen. Es muß darauf hingewiesen werden, daß Gummiteile auch altern und sich während langer Lagerzeiten verformen können, obwohl das Gerät nicht benutzt wird.

3. Service schedule for main components

The following chart lists the parts which should receive periodic servicing at the recommended intervals.

Table 1 indicates approximate times when replacement of critical internal parts should be considered. However, in actual usage, these times will vary greatly according to environmental and usage conditions. Routine inspection and maintenance are also important factors that influence equipment life. Note that rubber parts may become aged or deformed after long periods of storage, even if the equipment is not used.

Tabelle/Table 1 Standard Service Intervalle
Standard service periods

Gruppe / *Category*	Bezeichnung/Name	Service Intervalle (Betriebsstunden) *Periodic Service Schedule (Operating hours)*				
		1000	2000	3000	4000	5000
Kopf/*Head*	Obere Kopftrommel *Upper Drum Ass'y*	○	●	○	●	○
	Audio/Kontrollkopf *Audio/Control Head Ass'y*			●		
	Gesamtlöschkopf *Full erase head*					●
Motor/*Motor*	Bandantriebsmotor *Capstan Motor*		●		●	
	Einfädelmotor *Mode Control Motor Ass'y*		●		●	
	Cassettenmotor *Cassette Motor Ass'y*			●		
Zwischenrad *Idler*	GA-Rollen Einheit *Pinch-Roller Arm Ass'y*			●		
	Aufwickel-Kupplung *Take-up Clutch*		●		●	
	Aufwickel-Zwischenrad *Take-up Idler*		●		●	
	Wickelzwischenrad *Reel Idler*		●		●	
Riemen *Belt*	Bandantriebs-Riemen *Capstan Belt*	○	●	○	●	○
	Wickel-Riemen *Reel Belt*		●		●	
	Riemen für Aufwickelkupplung *Take-up Clutch Belt*		●		●	
	Einfädel-Riemen *Loading Belt*			●		
Bremse *Brake*	Bremsbelag *Brake Pad*		●		●	
	Fühlhebelbremsband *Tension Band Ass'y*		●		●	
Spulenteller *Reel Disk*	Abwickelspulenteller *S. Reel Disk Ass'y*			●		
	Aufwickelspulenteller *T. Reel Disk Ass'y*			●		
Bürste *Brush*	Bürsteneinheit *Brush Ass'y*		●		●	

○ Überprüfen und wenn notwendig auswechseln.
Check and replace if necessary

● Auswechseln/*Replace*

Hinweis:
Auch wenn das Gerät nicht häufig benutzt wurde, sollte die Reinigung, die Schmierung und der Austausch der Riemen alle zwei Jahre vorgenommen werden.

Note:
Even if the unit is not used frequently, cleaning, lubrication and replacement of the belts should be undertaken every 2 years.

Übersetzungen wichtiger Abkürzungen und Ausdrücke
Key to abbreviation

A

AC	Wechselstrom	*Alternating Current*
ACC	Automatische Farbsteuerung	*Automatic Color Control*
A/CTL	Audio/Kontrollkopf	*Audio/Control*
A. DUB	Nachvertonung	*Audio Dubbing*
AE	Audio-Löschkopf	*Audio Erase*
AFC	Automatische Frequenzsteuerung	*Automatic Frequency Control*
AGC	Automatische Verstärkungsregelung	*Automatic Gain Control*
AL	Nach Einfädeln	*After Loading*
ALL	Immer, ständig	*Always*
AMP	Verstärker	*Amplifier*
ANT	Antenne	*Antenna*
APC	Automatische Phasensteuerung	*Automatic Phase Control*
AR	Nach Aufnahme	*After Recording*
AUX	Reserveeingang	*Auxiliary*

B

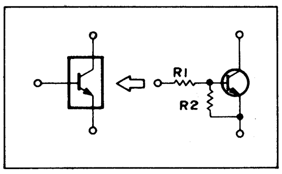
B	Basis	*Base*
BAL	Symmetrie	*Balance*
BLK	Schwarz	*Black*
BLU	Blau	*Blue*
BPF	Bandpaßfilter	*Band-Pass-Filter*
BRN	Braun	*Brown*
B. SOL	Bremsmagnet	*Brake Solenoid*
B/W	Schwarz/Weiß	*Black and White*

C		
CAP	Bandantrieb	*Capstan*
CARR	Träger	*Carrier*
CASS	Cassette	*Cassette*
CD	Abwärtszählen	*Count Down*
CF	Keramikfilter	*Ceramic Filter*
CH	Kanal	*Channel*
COL	Farbe	*Color (Colour)*
COMP	Vergleichsstufe	*Comparator*
CONN	Steckverbinder	*Connector*
CONV	Umsetzer	*Converter*
COUNT SEA	Memory-Suchlauf	*Counter Search*
C. PAUSE	Kamera-Pause	*Camera Pause*
C. SW	Cassettenschalter	*Cassette Switch*
CTL	Steuerung	*Control*
D		
DAC	Digital-Analog-Wandler	*Digital to Analog Converter*
DEMOD	Demodulator	*Demodulator*
DET	Auswerter	*Detector*
DL	Verzögerungsleitung	*Delay Line*
DOC	Drop-out-Kompensator	*Drop Out Compensator*
D. PU	Abtaster für Kopftrommel-Magnet	*Drum Pick-up*
DRUM FF	Kopftrommel-Flip-Flop	*Drum Flip-Flop*
E		
EF	Emitterfolger	*Emitter Follower*
EMPH	Emphasis	*Emphasis*
EQ	Entzerrer	*Equalizer*
E. SENS	Endsensor	*End Sensor*
E. SW	Elektronischer Schalter	*Electronic Switch*
F		
F	Sicherung	*Fuse*
F. ADV	Einzelbildbetrieb	*Frame Advance*
FE	Gesamtlöschkopf	*Full Erase*
FF	Schneller Vorlauf	*Fast Forward*
	Flip-Flop	*Flip-Flop*
FG	Frequenzgenerator	*Frequency Generator*
FM	Frequenzmodulation	*Frequency Modulation*
FR	Gesamtneuaufnahme	*Full Recording*
FWD	Vorwärts	*Forward*
G		
GEN	Generator	*Generator*
GND	Masse	*Ground*
GRN	Grün	*Green*
GRY	Grau	*Gray*
H		
HG	Hall-Generator	*Hall Generator*
HPF	Hochpaßfilter	*High-Pass Filter*
I		
ID	Ident-Impuls	*Identification*
IF	Zwischenfrequenz	*Intermediate Frequency*
IND	Anzeige	*Indicator*
INV	Umkehrstufe	*Inverter*
L		
L	Low-Pegel	*Low*
LED	Leuchtdiode	*Light Emitting Diode*
LOAD	Einfädeln	*Loading*
LPF	Tiefpaßfilter	*Low-Pass Filter*
M		
M.	Motor	*Motor*
MDA	Motorverstärker	*Motor Drive Amplifier*
MECHACON	Mechaniksteuerung	*Mechanism Control*
MIC	Mikrofon	*Microphone*
MIX	Mischstufe	*Mixer, Mixing*
MMV	Monomultivibrator	*Monostable Multivibrator*
MOD	Modulator	*Modulator*
MUTE	Stummabstimmung	*Muting*
N		
NC	Nicht angeschlossen	*Non Connection*
NON-LIN	Nicht linear	*Non-Linear*
O		
OP	Betrieb	*Operation*
ORN	Orange	*Orange*
OSC	Oszillator	*Oscillator*
P		
PB	Wiedergabe	*Playback*
PI	Lichtschranke	*Photo Interrupter*
PR	Gummiandruckrolle	*Pinch Roller*
P/S	Pause/Standbild	*Pause/Still*
P. TR	Leistungstransistor	*Power Transistor*
PU	Abtasten, Abfragen	*Pick-up*
PWB	Leiterplatte	*Pinted Wiring Board*
R		
REC	Aufnahme	*Recording (Record)*
RED	Rot	*Red*
REG	Regelung	*Regulator*
REV	Entgegengesetzt	*Reverse*
REW	Rücklauf	*Rewind*
RF	Hochfrequenz	*Radio Frequency*
R/P	Aufnahme/Wiedergabe	*Record/Playback*
RT	Rotierender Transformator	*Rotary Transformer*
RUN IND	Bandlaufanzeige	*Running Indicator*
RY	Relais	*Relay*
S		
SAFE	Sicherheit	*Safety*
SEAR	Suchen	*Search*
SEC	Sekunde	*Second*
SEL	Auswahl	*Select*
SENS	Sensor	*Sensor*
SF	Sourcefolger	*Source Follower*

SOL	Magnet	*Solenoid*
S. R.	Abwickelspulenteller	*Supply Reel*
S. SENS	Startsensor	*Start Sensor*
S. SEP	Synchronsignal-Abtrennstufe	*Sync Separator*
SWD	Geschaltet	*Switched*
SW	Schalter	*Switch*
T		
T. E ALM	Alarm bei Bandende	*Tape End Alarm*
TP	Testpunkt	*Test Point*
TR	Transistor	*Transistor*
TRANS	Transformator	*Transformer*
T. REC	Schaltuhr-Aufnahme	*Timer Record*
T. SW	Schaltuhr-Schalter	*Timer Switch*
T/T	Tuner/Schaltuhr	*Tuner/Timer*
TU	Aufwickeln	*Take-up*
TU. R	Aufwickelspulenteller	*Take-up Reel*
U		
UL	Entladen, ausgefädelt	*Unloading*
UNSWD	Nicht geschaltet	*Unswitched*
V		
VCO	Spannungsgesteuerter Oszillator	*Voltage Controlled Oscillator*
VLT	Violett	*Violet*
V. HOLD	Vertikaler Bildstand	*Vertical Hold*
V. PULSE	Vertikalimpuls	*Vertical Pulse*
V. SEL	Videosignal-Anwahl	*Video Select*
V/T	Video/Fernsehen	*Video/Television*
V/U	VHF/UHF	*VHF/UHF*
VXO	Steuerbarer Quarzoszillator	*Variable Crystal Oscillator*
W		
W	Watt	*Watt*
W/D	Weiß und Schwarz	*White and Dark*
WHT	Weiß	*White*
Y		
Y	Helligkeitssignal (Y)	*Luminance*
YLW	Gelb	*Yellow*

Digital Transistor

DIGITAL TRANSISTOR



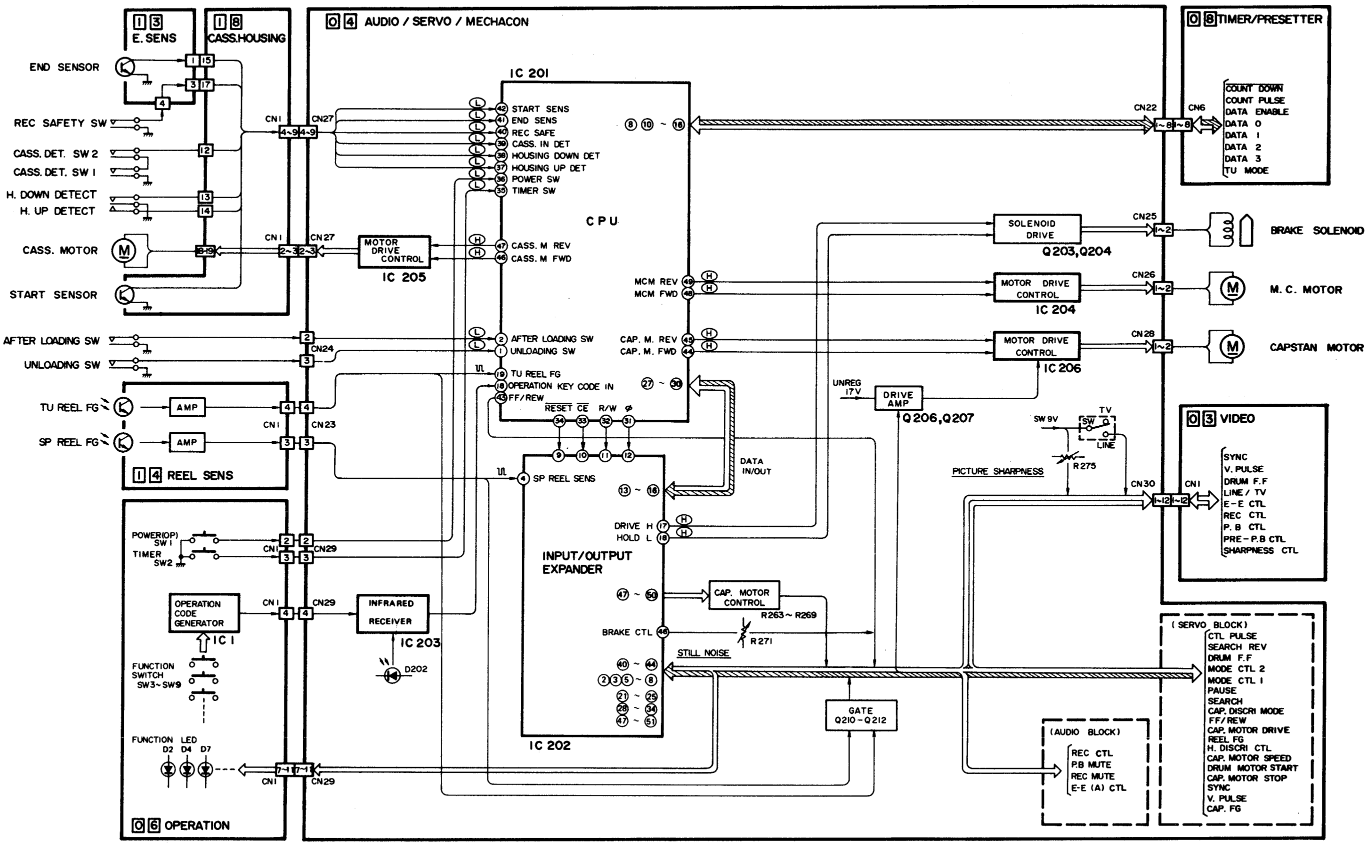
RESISTOR VALUES

JUNCTION	Part NO.	R1 (KΩ)	R2 (KΩ)
PNP	DTA114	10	10
	DTA124	22	22
	DTA144	47	47
	DTA144WF	47	22
	DTA114Y	10	47
	DTA114T	10	OPEN
NPN	DTC114	10	10
	DTC124	22	22
	DTC144	47	47
	DTC144WT	47	22
	DTC114Y	10	47
	DTC143T	4.7	OPEN

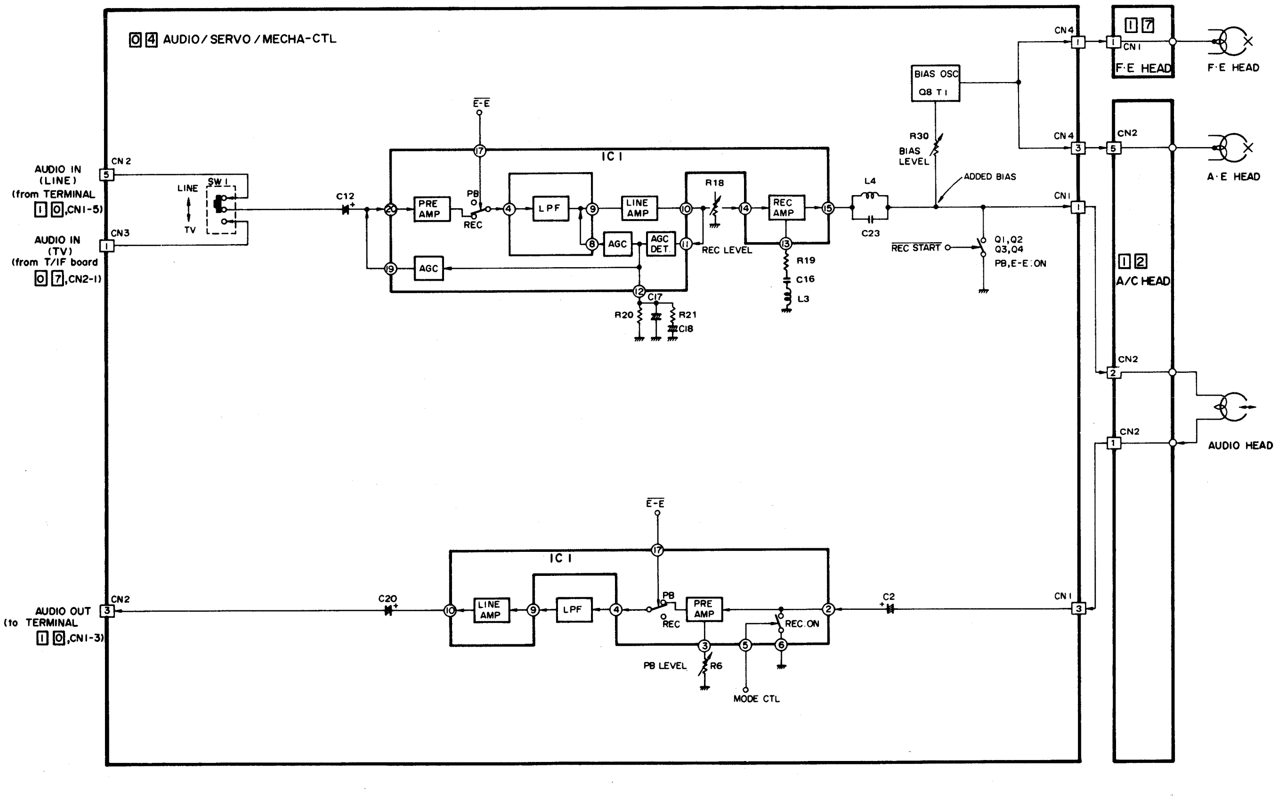
Note : The digital transistor is a type that includes built in resistors.
It features and small size and high reliability.
Both PNP and NPN types are available.

USES : INVERTOR, INTERFACE, DRIVER CIRCUITS.

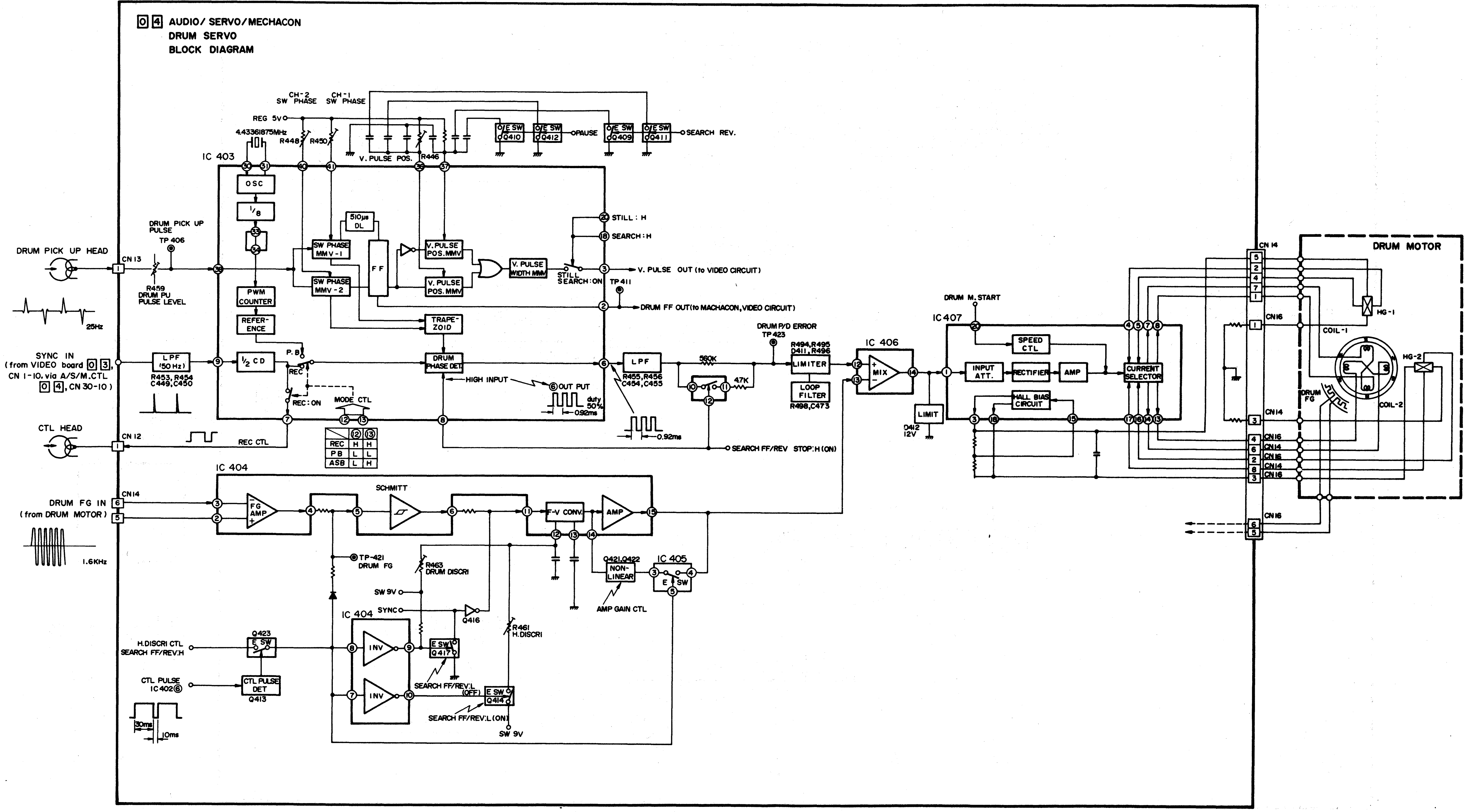
Mechaniksteuerung – Blockdarstellung · Mechanism control block diagram


1 3 E. SENS
1 8 CASS.HOUSING
0 4 AUDIO / SERVO / MECHACON
0 8 TIMER/PRESETTER
END SENSOR
REC SAFETY SW
CASS. DET. SW 2
CASS. DET. SW 1
H. DOWN DETECT
H. UP DETECT
CASS. MOTOR
START SENSOR
AFTER LOADING SW
UNLOADING SW
TU REEL FG
SP REEL FG
AMP
1 4 REEL SENS
IC 201
START SENS
END SENS
REC SAFE
CASS. IN DET
HOUSING DOWN DET
HOUSING UP DET
POWER SW
TIMER SW
CPU
MOTOR DRIVE CONTROL
IC 205
CASS. M REV
CASS. M FWD
MCM REV
MCM FWD
CAP. M. REV
CAP. M. FWD
AFTER LOADING SW
UNLOADING SW
TU REEL FG
OPERATION KEY CODE IN
FF/REW
RESET CE R/W φ
SP REEL SENS
DATA IN/OUT
DRIVE H
HOLD L
INPUT/OUTPUT EXPANDER
IC 202
CAP. MOTOR CONTROL
R263 ~ R269
BRAKE CTL
R271
STILL NOISE
GATE Q210 – Q212
SOLENOID DRIVE
Q203, Q204
MOTOR DRIVE CONTROL
IC 204
MOTOR DRIVE CONTROL
IC 206
UNREG 17V
DRIVE AMP
Q206, Q207
SW 9V
TV
LINE
PICTURE SHARPNESS
R275
BRAKE SOLENOID
M. C. MOTOR
CAPSTAN MOTOR
CN1
CN6
CN22
CN23
CN24
CN25
CN26
CN27
CN28
CN29
CN30
COUNT DOWN
COUNT PULSE
DATA ENABLE
DATA 0
DATA 1
DATA 2
DATA 3
TU MODE
0 3 VIDEO
SYNC
V. PULSE
DRUM F.F
LINE / TV
E-E CTL
REC CTL
P. B CTL
PRE – P.B CTL
SHARPNESS CTL
(SERVO BLOCK)
CTL PULSE
SEARCH REV
DRUM F.F
MODE CTL 2
MODE CTL 1
PAUSE
SEARCH
CAP. DISCRI MODE
FF/REW
CAP. MOTOR DRIVE
REEL FG
H. DISCRI CTL
CAP. MOTOR SPEED
DRUM MOTOR START
CAP. MOTOR STOP
SYNC
V. PULSE
CAP. FG
(AUDIO BLOCK)
REC CTL
P.B MUTE
REC MUTE
E-E (A) CTL
POWER(OP) SW1
TIMER SW2
OPERATION CODE GENERATOR
IC 1
INFRARED RECEIVER
IC 203
D202
FUNCTION SWITCH SW3 ~ SW9
FUNCTION LED D2 D4 D7
0 6 OPERATION

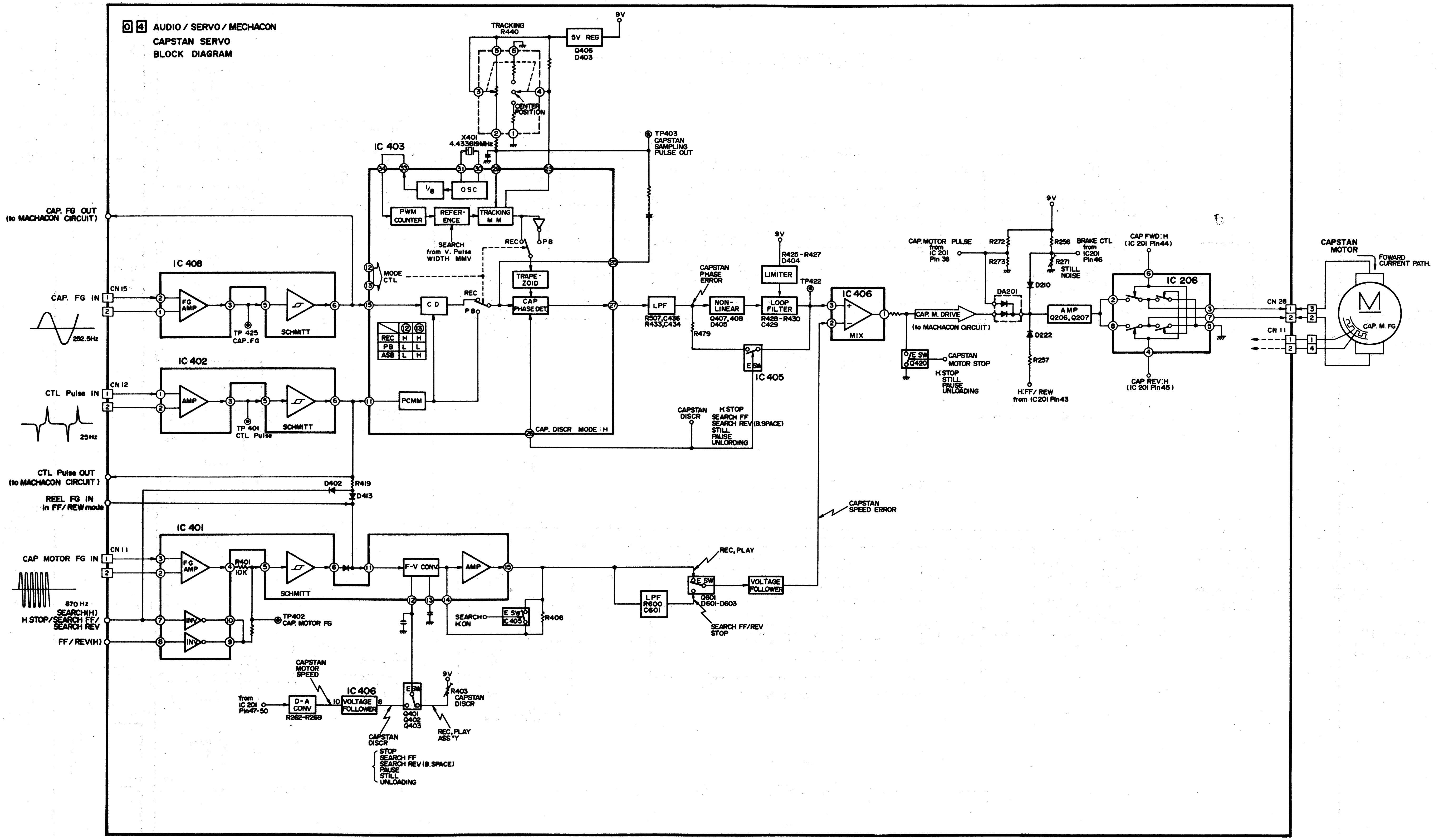
Audio – Blockdarstellung · Audio block diagram Typ -B-, -C-, -D-


0 4 AUDIO / SERVO / MECHA-CTL
AUDIO IN (LINE) (from TERMINAL 1 0, CN1-5)
AUDIO IN (TV) (from T/IF board 0 7, CN2-1)
CN2
CN3
LINE
SW1
TV
C12
E-E
IC 1
PRE AMP
PB
REC
LPF
LINE AMP
R18
REC AMP
AGC
AGC DET
REC LEVEL
R19
C16
L3
C17
R20
R21
C18
L4
C23
BIAS OSC Q8 T1
R30
BIAS LEVEL
ADDED BIAS
REC START
Q1, Q2 Q3, Q4
PB, E-E: ON
CN4
CN1
1 7
F·E HEAD
CN2
A·E HEAD
1 2
A/C HEAD
AUDIO HEAD
AUDIO OUT (to TERMINAL 1 0, CN1-3)
C20
LINE AMP
LPF
PB
REC
PRE AMP
REC. ON
PB LEVEL
R6
MODE CTL
C2

Kopftrommelservo – Blockdarstellung · Drum servo block diagram

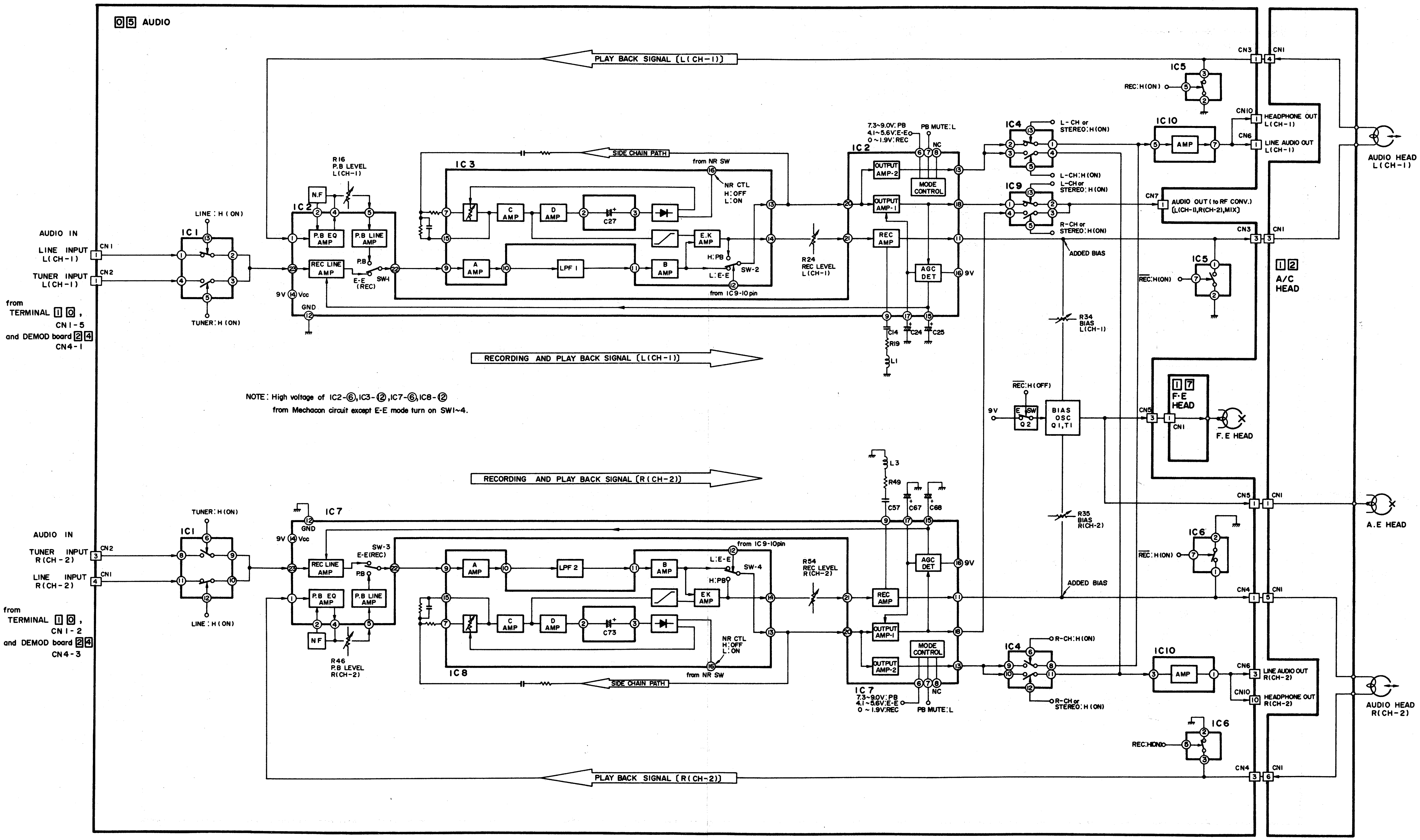

0 4 AUDIO/ SERVO/MECHACON
DRUM SERVO
BLOCK DIAGRAM
CH-2 SW PHASE
CH-1 SW PHASE
REG 5V
4.43361875MHz
R448
R450
V. PULSE POS.
R446
O/E SW Q410
O/E SW Q412
PAUSE
O/E SW Q409
O/E SW Q411
SEARCH REV.
IC 403
OSC
1/8
510µs DL
SW PHASE MMV-1
SW PHASE MMV-2
FF
V. PULSE POS. MMV
V. PULSE POS. MMV
V. PULSE WIDTH MMV
STILL : H
SEARCH : H
STILL SEARCH : ON
V. PULSE OUT (to VIDEO CIRCUIT)
TP 411
DRUM FF OUT (to MACHACON, VIDEO CIRCUIT)
DRUM PICK UP HEAD
CN 13
DRUM PICK UP PULSE
TP 406
R459 DRUM PU PULSE LEVEL
25Hz
PWM COUNTER
REFERENCE
TRAPEZOID
SYNC IN (from VIDEO board 0 3, CN 1-10. via A/S/M.CTL 0 4, CN 30-10)
LPF (50 Hz)
R453, R454 C449, C450
1/2 CD
P.B
REC
REC : ON
DRUM PHASE DET.
HIGH INPUT
⑥ OUT PUT
duty 50%
0.92ms
MODE CTL
⑫ ⑬
REC H H
PB L L
ASB L H
CTL HEAD
CN 12
REC CTL
LPF
R455, R456 C454, C455
0.92ms
560K
4.7K
SEARCH FF/REV STOP: H (ON)
DRUM P/D ERROR
TP 423
R494, R495 D411, R496
LIMITER
LOOP FILTER
R498, C473
IC 406
MIX
LIMIT
D412 12V
DRUM M. START
IC407
SPEED CTL
INPUT ATT.
RECTIFIER
AMP
CURRENT SELECTOR
HALL BIAS CIRCUIT
CN 14
CN16
DRUM MOTOR
HG-1
COIL-1
HG-2
DRUM FG
COIL-2
IC 404
DRUM FG IN (from DRUM MOTOR)
CN14
1.6KHz
FG AMP
SCHMITT
F-V CONV.
AMP
TP-421 DRUM FG
R463 DRUM DISCRI
SW 9V
SYNC
Q416
Q421, Q422
NON-LINEAR
AMP GAIN CTL
IC 405
E SW
IC 404
INV
INV
E SW Q417
R461 H.DISCRI
SEARCH FF/REV: L (OFF)
E SW Q414
SEARCH FF/REV: L (ON)
SW 9V
Q423
E SW
H.DISCRI CTL SEARCH FF/REV: H
CTL PULSE IC402⑥
CTL PULSE DET
Q413
30ms
10ms

Capstanservo – Blockdarstellung · Capstan servo block diagram



0 4 AUDIO / SERVO / MECHACON
CAPSTAN SERVO
BLOCK DIAGRAM
TRACKING R440
5V REG
Q406 D403
9V
CENTER POSITION
X401 4.433619MHz
IC 403
1/8
OSC
PWM COUNTER
REFER-ENCE
TRACKING M M
SEARCH from V. Pulse WIDTH MMV
REC
PB
MODE CTL
TRAPE-ZOID
CAP PHASE DET.
C D
PCMM
REC H H
PB L L
ASB L H
CAP. DISCR MODE : H
TP403 CAPSTAN SAMPLING PULSE OUT
CAP. FG OUT (to MACHACON CIRCUIT)
CAP. FG IN
CN 15
IC 408
FG AMP
TP 425 CAP. FG
SCHMITT
252.5Hz
CTL Pulse IN
CN 12
IC 402
AMP
TP 401 CTL Pulse
SCHMITT
25Hz
CTL Pulse OUT (to MACHACON CIRCUIT)
REEL FG IN in FF/REW mode
D402
R419
D413
IC 401
CAP MOTOR FG IN
CN 11
FG AMP
R401 10K
SCHMITT
870 Hz
SEARCH(H) H.STOP/SEARCH FF/ SEARCH REV
FF / REV(H)
INV
INV
TP402 CAP. MOTOR FG
F-V CONV
AMP
SEARCH H:ON
E SW IC 405
R406
CAPSTAN MOTOR SPEED
from IC 201 Pin47-50
D-A CONV
R262-R269
IC 406
VOLTAGE FOLLOWER
E SW
Q401 Q402 Q403
9V
R403 CAPSTAN DISCR
REC, PLAY ASS'Y
CAPSTAN DISCR
STOP
SEARCH FF
SEARCH REV (B.SPACE)
PAUSE
STILL
UNLOADING
LPF
R507, C436 R433, C434
CAPSTAN PHASE ERROR
R479
NON-LINEAR
Q407, 408 D405
9V
R425-R427 D404
LIMITER
LOOP FILTER
R428-R430 C429
TP422
E SW
IC 405
CAPSTAN DISCR
H:STOP
SEARCH FF
SEARCH REV (B.SPACE)
STILL
PAUSE
UNLORDING
IC 406
MIX
CAPSTAN SPEED ERROR
REC, PLAY
E SW
Q601 D601-D603
LPF R600 C601
VOLTAGE FOLLOWER
SEARCH FF/REV STOP
CAP. M. DRIVE
(to MACHACON CIRCUIT)
E SW Q420
CAPSTAN MOTOR STOP
H:STOP
STILL
PAUSE
UNLOADING
CAP. MOTOR PULSE from IC 201 Pin 38
R272
R273
DA201
9V
R256
BRAKE CTL from IC201 Pin46
R271 STILL NOISE
D210
D222
R257
H:FF/ REW from IC201 Pin43
AMP Q206, Q207
CAP FWD: H (IC 201 Pin44)
IC 206
CAP REV: H (IC 201 Pin45)
CN 28
CN 11
CAPSTAN MOTOR
FOWARD CURRENT PATH.
M
CAP. M. FG

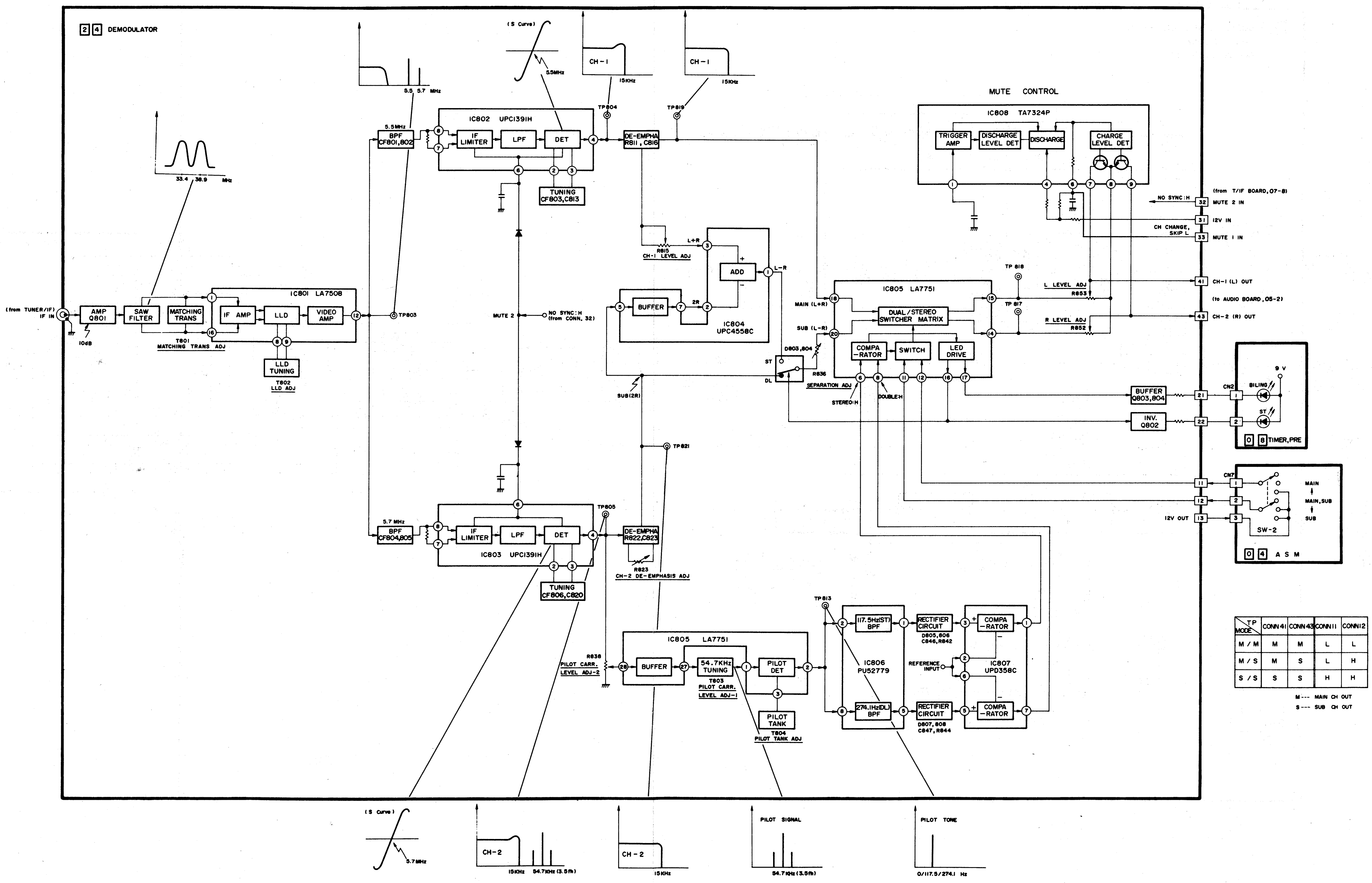
Audio – Blockdarstellung · Audio block diagram Typ -A-



05 AUDIO
PLAY BACK SIGNAL (L(CH-1))
PLAY BACK SIGNAL (R(CH-2))
SIDE CHAIN PATH
RECORDING AND PLAY BACK SIGNAL (L(CH-1))
RECORDING AND PLAY BACK SIGNAL (R(CH-2))
AUDIO IN
LINE INPUT L(CH-1)
TUNER INPUT L(CH-1)
TUNER INPUT R(CH-2)
LINE INPUT R(CH-2)
CN1
CN2
from TERMINAL 10, CN1-5 and DEMOD board 24 CN4-1
from TERMINAL 10, CN1-2 and DEMOD board 24 CN4-3
IC1
LINE : H (ON)
TUNER : H (ON)
IC2
IC3
IC7
IC8
N.F
NF
R16 P.B LEVEL L(CH-1)
R46 P.B LEVEL R(CH-2)
P.B EQ AMP
P.B LINE AMP
REC LINE AMP
PB
E-E (REC)
SW-1
SW-2
SW-3
E-E(REC)
SW-4
9V Vcc
GND
A AMP
B AMP
C AMP
D AMP
LPF 1
LPF 2
C27
C73
E.K AMP
EK AMP
from NR SW
NR CTL H:OFF L:ON
H:PB
L:E-E
from IC9-10pin
R24 REC LEVEL L(CH-1)
R54 REC LEVEL R(CH-2)
7.3~9.0V: PB 4.1~5.6V: E-E 0~1.9V: REC
PB MUTE : L
NC
OUTPUT AMP-2
OUTPUT AMP-1
MODE CONTROL
REC AMP
AGC DET
9V
C14
C24
C25
R19
L1
L3
R49
C57
C67
C68
IC4
IC9
L-CH or STEREO: H (ON)
L-CH: H (ON)
L-CH or STEREO: H (ON)
R-CH or STEREO: H (ON)
R-CH: H (ON)
R-CH or STEREO: H (ON)
ADDED BIAS
R34 BIAS L(CH-1)
R35 BIAS R(CH-2)
REC: H (OFF)
E SW Q2
BIAS OSC Q1, T1
IC5
IC6
IC10
AMP
REC: H (ON)
CN3
CN4
CN5
CN6
CN7
CN10
HEADPHONE OUT L(CH-1)
LINE AUDIO OUT L(CH-1)
AUDIO OUT (to RF CONV.) (L(CH-1), R(CH-2), MIX)
LINE AUDIO OUT R(CH-2)
HEADPHONE OUT R(CH-2)
12 A/C HEAD
17 F·E HEAD
F.E HEAD
AUDIO HEAD L(CH-1)
AUDIO HEAD R(CH-2)
A.E HEAD

NOTE : High voltage of IC2-⑥, IC3-⑫, IC7-⑥, IC8-⑫ from Mechacon circuit except E-E mode turn on SW1~4.

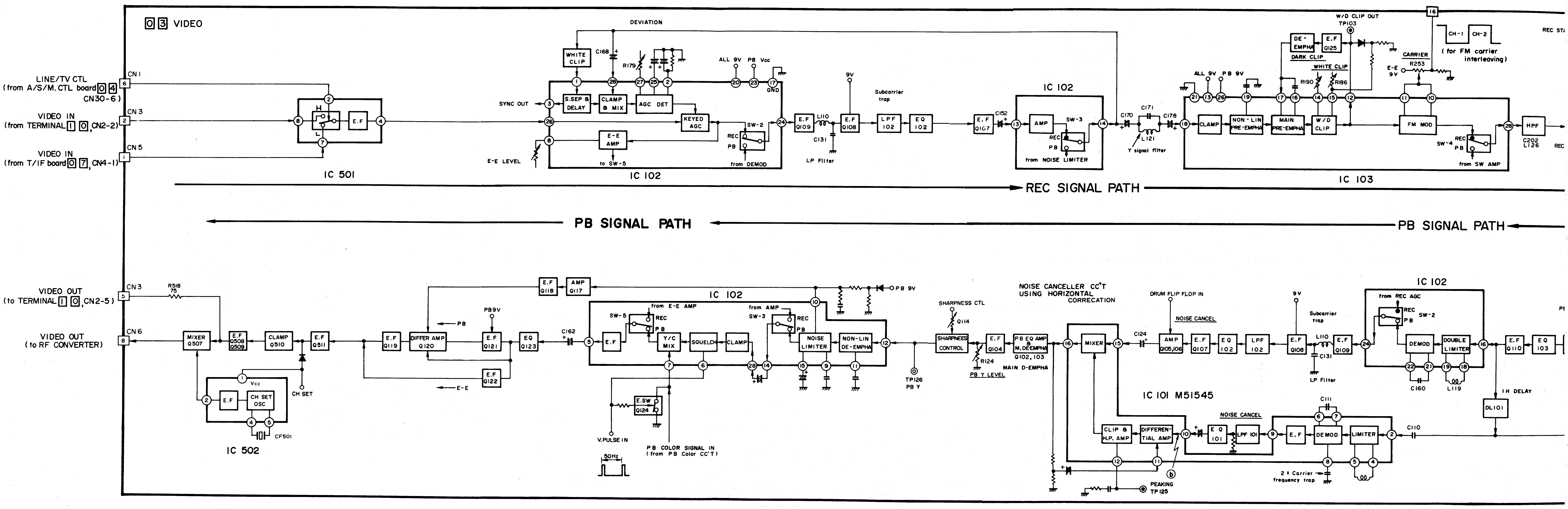
Audio-Demodulator – Blockdarstellung · Audio demodulator block diagram Typ -A-


2 4 DEMODULATOR
(from TUNER/IF) IF IN
AMP Q801
10dB
SAW FILTER
MATCHING TRANS
T801 MATCHING TRANS ADJ
IC801 LA7508
IF AMP
LLD
VIDEO AMP
LLD TUNING
T802 LLD ADJ
TP803
33.4 38.9 MHz
5.5 5.7 MHz
5.5MHz
BPF CF801,802
IC802 UPC1391H
IF LIMITER
LPF
DET
TUNING CF803,C813
(S Curve)
5.5MHz
CH-1
15KHz
TP804
TP819
DE-EMPHA R811, C816
MUTE 2
NO SYNC:H (from CONN. 32)
L+R
R815 CH-1 LEVEL ADJ
ADD
L-R
BUFFER
2R
IC804 UPC4558C
SUB(2R)
TP821
5.7 MHz
BPF CF804,805
IC803 UPC1391H
TUNING CF806,C820
TP805
DE-EMPHA R822,C823
R823 CH-2 DE-EMPHASIS ADJ
MUTE CONTROL
IC808 TA7324P
TRIGGER AMP
DISCHARGE LEVEL DET
DISCHARGE
CHARGE LEVEL DET
(from T/IF BOARD, 07-8)
NO SYNC:H
32 MUTE 2 IN
31 12V IN
CH CHANGE, SKIP L
33 MUTE 1 IN
41 CH-1 (L) OUT
(to AUDIO BOARD, 05-2)
43 CH-2 (R) OUT
TP 818
TP 817
L LEVEL ADJ R853
R LEVEL ADJ R852
IC805 LA7751
MAIN (L+R)
SUB (L-R)
DUAL/STEREO SWITCHER MATRIX
COMPA-RATOR
SWITCH
LED DRIVE
D803,804
ST
DL
R836
SEPARATION ADJ
STEREO:H
DOUBLE:H
BUFFER Q803,804
INV. Q802
21
22
CN2
9 V
BILING
ST
0 8 TIMER,PRE
CN7
11
12
12V OUT 13
MAIN
MAIN,SUB
SUB
SW-2
0 4 A S M
TP813
R838 PILOT CARR. LEVEL ADJ-2
IC805 LA7751
BUFFER
54.7KHz TUNING
T803 PILOT CARR. LEVEL ADJ-1
PILOT DET
PILOT TANK
T804 PILOT TANK ADJ
117.5Hz(ST) BPF
274.1Hz(DL) BPF
IC806 PU52779
RECTIFIER CIRCUIT
D805,806 C846,R842
D807,808 C847,R844
REFERENCE INPUT
COMPA-RATOR
IC807 UPD358C
(S Curve)
5.7MHz
CH-2
15KHz 54.7KHz (3.5fh)
CH-2
15KHz
PILOT SIGNAL
54.7KHz (3.5fh)
PILOT TONE
0/117.5/274.1 Hz

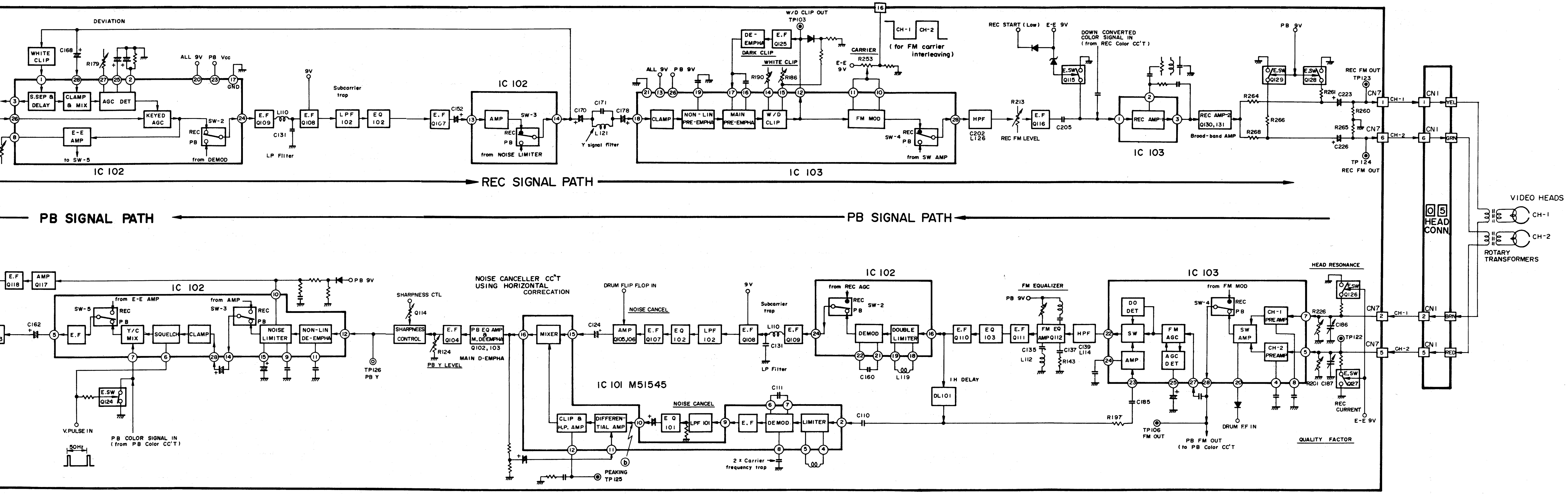
TP / MODE	CONN41	CONN43	CONN11	CONN12
M / M	M	M	L	L
M / S	M	S	L	H
S / S	S	S	H	H

M --- MAIN CH OUT
S --- SUB CH OUT

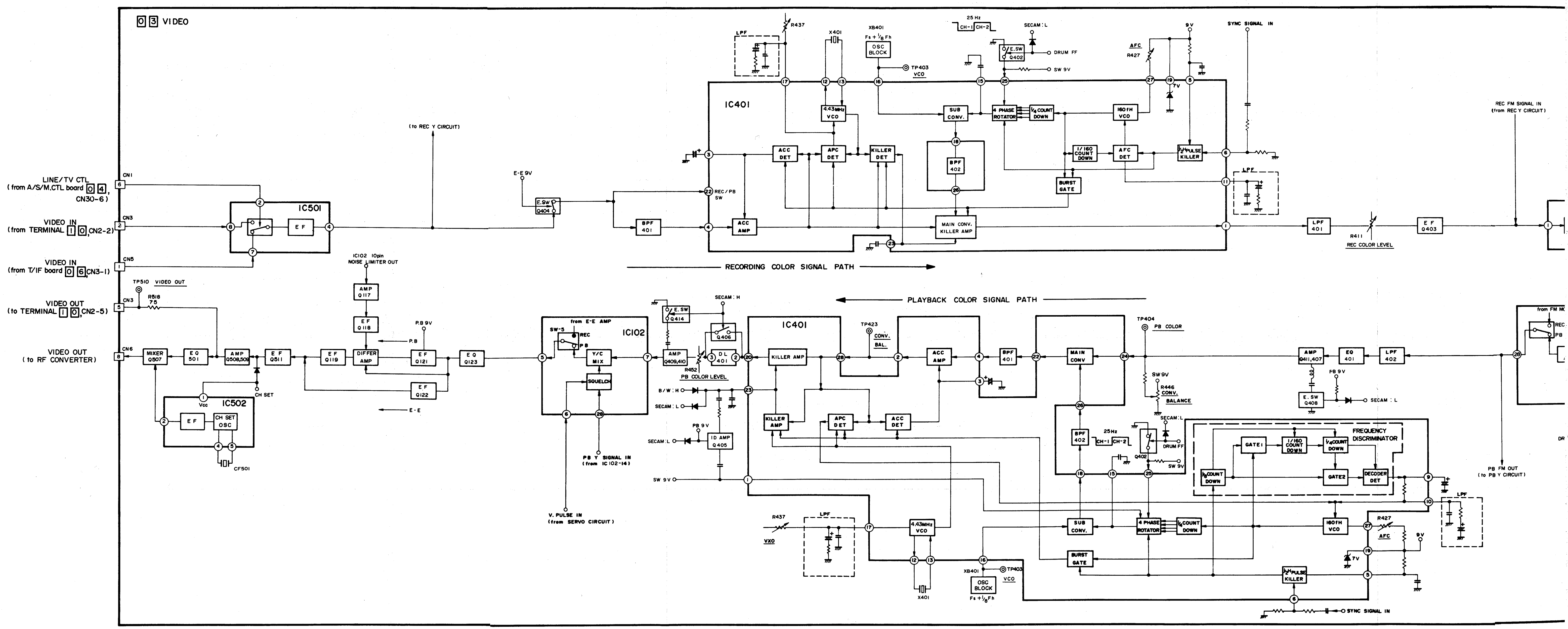
Luminanzsignal – Blockdarstellung · Luminance signal block diagram

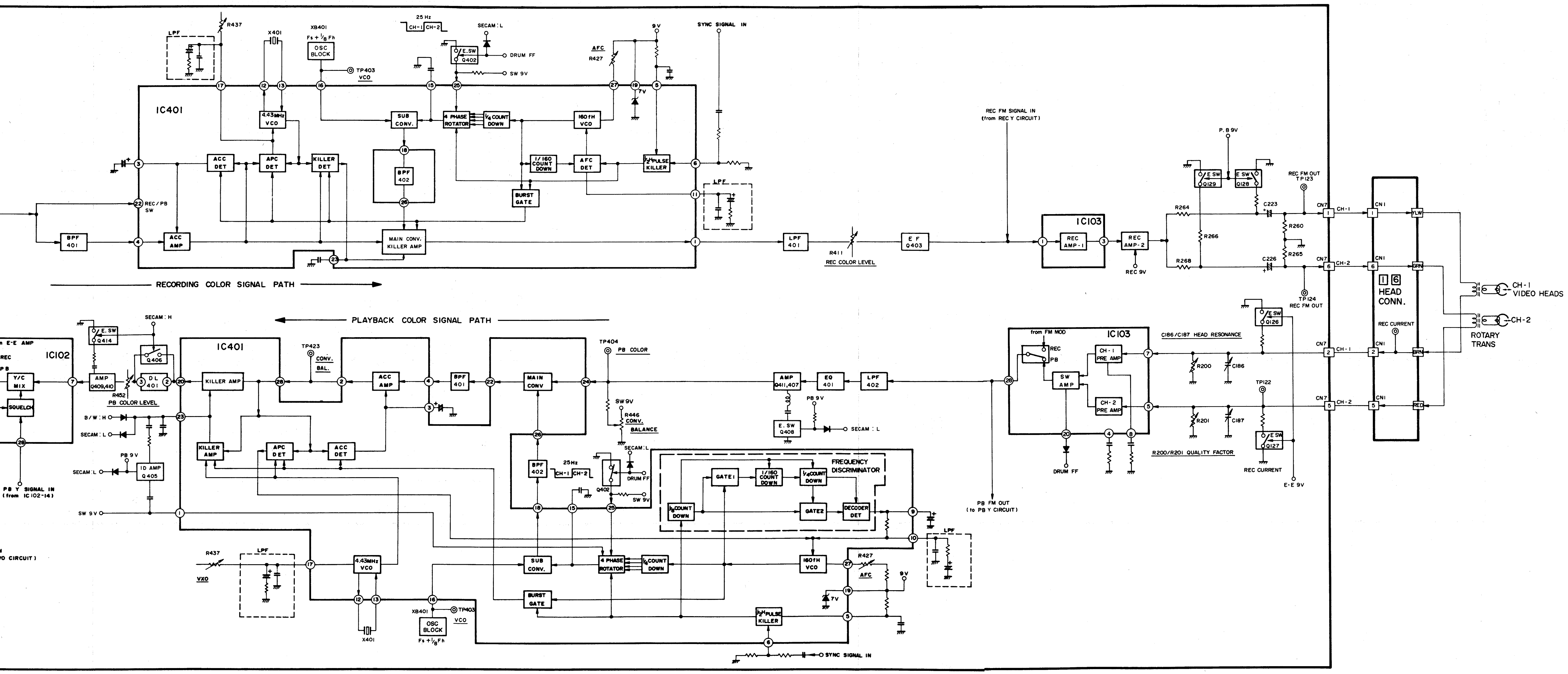

03 VIDEO
LINE/TV CTL (from A/S/M. CTL board 04 CN30-6)
VIDEO IN (from TERMINAL 10, CN2-2)
VIDEO IN (from T/IF board 07, CN4-1)
CN1
CN3
CN5
H
L
E.F
IC 501
DEVIATION
WHITE CLIP
C168
R179
S.SEP & DELAY
CLAMP & MIX
AGC DET
KEYED AGC
E-E AMP
SYNC OUT
E-E LEVEL
to SW-5
ALL 9V
P8
Vcc
GND
SW-2
REC
PB
from DEMOD
IC 102
E.F Q109
L110
C131
LP Filter
9V
E.F Q108
Subcarrier trap
LPF 102
EQ 102
E.F Q107
C152
AMP
SW-3
from NOISE LIMITER
C170
C171
C178
L121
Y signal filter
ALL 9V
PB 9V
CLAMP
NON-LIN PRE-EMPHA
MAIN PRE-EMPHA
W/D CLIP
DE-EMPHA
E.F Q125
DARK CLIP
WHITE CLIP
R190
R186
W/D CLIP OUT TP103
16
CH-1
CH-2
(for FM carrier interleaving)
CARRIER
R253
E-E 9V
FM MOD
SW-4
from SW AMP
HPF
C202 L126
IC 103
REC ST
REC
REC SIGNAL PATH
PB SIGNAL PATH
PB SIGNAL PATH
VIDEO OUT (to TERMINAL 10, CN2-5)
VIDEO OUT (to RF CONVERTER)
CN3
CN6
R518 75
MIXER Q507
E.F Q508 Q509
CLAMP Q510
E.F Q511
CH SET
Vcc
CH SET OSC
CF501
IC 502
E.F Q119
DIFFER AMP Q120
PB
PB9V
E.F Q121
E.F Q122
E-E
EQ Q123
E.F Q118
AMP Q117
C162
IC 102
SW-5
from E-E AMP
Y/C MIX
SQUELCH
CLAMP
from AMP
NOISE LIMITER
NON-LIN DE-EMPHA
E.SW Q124
V.PULSE IN
50Hz
PB COLOR SIGNAL IN (from PB Color CC'T)
PB 9V
TP126 PB Y
SHARPNESS CTL
Q114
SHARPNEES CONTROL
R124
PB Y LEVEL
E.F Q104
PB EQ AMP & M.DE-EMPHA
Q102, 103
MAIN D-EMPHA
NOISE CANCELLER CC'T USING HORIZONTAL CORRECATION
MIXER
C124
DRUM FLIP FLOP IN
NOISE CANCEL
AMP Q105,106
E.F Q107
EQ 102
LPF 102
9V
E.F Q108
L110
C131
LP Filter
E.F Q109
IC 102
from REC AGC
DEMOD
DOUBLE LIMITER
C160
L119
E.F Q110
EQ 103
1H DELAY
DL101
IC 101 M51545
CLIP & H.P. AMP
DIFFEREN-TIAL AMP
b
E Q 101
LPF 101
E.F
DEMOD
LIMITER
C111
C110
2 × Carrier frequency trap
PEAKING TP125
PI

k diagram

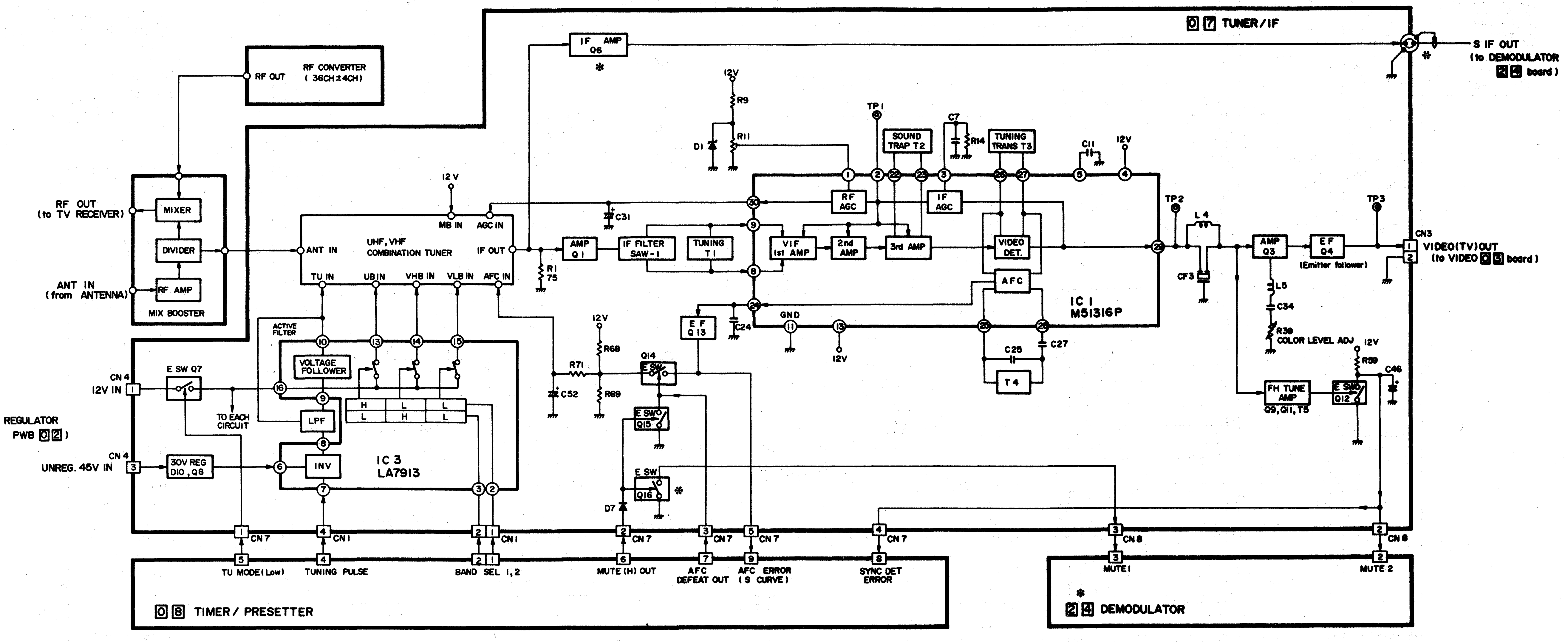

REC SIGNAL PATH
PB SIGNAL PATH
PB SIGNAL PATH
DEVIATION
WHITE CLIP
C168
R179
S.SEP & DELAY
CLAMP & MIX
AGC DET
KEYED AGC
E-E AMP
SW-2
REC
PB
to SW-5
from DEMOD
ALL 9V
PB Vcc
GND
IC 102
E.F Q109
L110
C131
LP Filter
E.F Q108
9V
Subcarrier trap
LPF 102
EQ 102
E.F Q107
C152
IC 102
AMP
SW-3
from NOISE LIMITER
C170
C171
C178
L121
Y signal filter
W/D CLIP OUT
TP103
DE-EMPHA
E.F Q125
DARK CLIP
WHITE CLIP
R190
R186
CARRIER
R253
E-E 9V
CH-1
CH-2
(for FM carrier interleaving)
CLAMP
NON-LIN PRE-EMPHA
MAIN PRE-EMPHA
W/D CLIP
FM MOD
SW-4
from SW AMP
IC 103
HPF
C202
L126
R213
REC FM LEVEL
E.F Q116
C205
REC START (Low)
E-E 9V
DOWN CONVERTED COLOR SIGNAL IN (from REC Color CC'T)
E.SW Q115
REC AMP-1
IC 103
REC AMP-2 Q130, 131
Broad-band AMP
R264
R266
R268
PB 9V
E.SW Q129
E.SW Q128
R261
C223
R260
R265
C226
REC FM OUT
TP123
TP 124
REC FM OUT
CN7
CN1
YEL
GRN
RED
05 HEAD CONN.
VIDEO HEADS
CH-1
CH-2
ROTARY TRANSFORMERS
E.F Q118
AMP Q117
PB 9V
IC 102
C162
E.F
SW-5
from E-E AMP
Y/C MIX
SQUELCH
CLAMP
from AMP
SW-3
NOISE LIMITER
NON-LIN DE-EMPHA
E.SW Q124
V.PULSE IN
50Hz
PB COLOR SIGNAL IN (from PB Color CC'T)
TP126
PB Y
SHARPNESS CTL
Q114
SHARPNEES CONTROL
R124
PB Y LEVEL
E.F Q104
PB EQ AMP & M.DE-EMPHA Q102, 103
MAIN D-EMPHA
NOISE CANCELLER CC'T USING HORIZONTAL CORRECATION
MIXER
IC 101 M51545
CLIP & H.P. AMP
DIFFEREN-TIAL AMP
PEAKING
TP125
EQ 101
LPF 101
NOISE CANCEL
E.F
DEMOD
LIMITER
C111
2 x Carrier frequency trap
C110
DRUM FLIP FLOP IN
NOISE CANCEL
C124
AMP Q105,106
E.F Q107
EQ 102
LPF 102
9V
E.F Q108
Subcarrier trap
L110
C131
LP Filter
E.F Q109
IC 102
from REC AGC
SW-2
DEMOD
DOUBLE LIMITER
C160
L119
1H DELAY
DL101
E.F Q110
EQ 103
E.F Q111
FM EQUALIZER
PB 9V
FM EQ AMP Q112
C135
L112
C137
R143
HPF
C139
L114
IC 103
from FM MOD
DO DET
SW
AMP
FM AGC
AGC DET
SW-4
SW AMP
CH-1 PREAMP
CH-2 PREAMP
R197
C185
TP106
FM OUT
PB FM OUT (to PB Color CC'T)
DRUM F.F IN
HEAD RESONANCE
E.SW Q126
R226
C186
TP122
R201
C187
E.SW Q127
REC CURRENT
E-E 9V
QUALITY FACTOR

Farbsignal – Blockdarstellung · Color signal block diagram


0 3 VIDEO
LINE/TV CTL (from A/S/M.CTL board 0 4, CN30-6)
VIDEO IN (from TERMINAL 1 0, CN2-2)
VIDEO IN (from T/IF board 0 6, CN3-1)
VIDEO OUT (to TERMINAL 1 0, CN2-5)
VIDEO OUT (to RF CONVERTER)
CN1
CN3
CN5
CN6
TP510 VIDEO OUT
R518 75
IC501
E F
IC502
Vcc
CH SET OSC
CH SET
CF501
MIXER Q507
E Q 501
AMP Q508,509
E F Q511
E F Q119
DIFFER AMP
E F Q121
E F Q122
E Q Q123
AMP Q117
E F Q118
IC102 10pin NOISE LIMITER OUT
P.B 9V
P.B
E-E
(to REC Y CIRCUIT)
E-E 9V
E.SW Q404
BPF 401
IC102
SW-5
REC
P B
from E-E AMP
Y/C MIX
SQUELCH
V. PULSE IN (from SERVO CIRCUIT)
PB Y SIGNAL IN (from IC102-14)
IC401
LPF
R437
X401
XB401
Fs + 1/8 Fh
OSC BLOCK
TP403 VCO
25 Hz
CH-1 CH-2
SECAM : L
E.SW Q402
DRUM FF
SW 9V
AFC
R427
9V
7V
SYNC SIGNAL IN
REC/PB SW
ACC AMP
ACC DET
APC DET
KILLER DET
4.43MHz VCO
SUB CONV.
BPF 402
MAIN CONV. KILLER AMP
4 PHASE ROTATOR
1/4 COUNT DOWN
1/160 COUNT DOWN
BURST GATE
160fH VCO
AFC DET
1/2H PULSE KILLER
REC FM SIGNAL IN (from REC Y CIRCUIT)
LPF 401
R411
REC COLOR LEVEL
E F Q403
RECORDING COLOR SIGNAL PATH
PLAYBACK COLOR SIGNAL PATH
SECAM : H
E. SW Q414
Q406
AMP Q409,410
R452
PB COLOR LEVEL
D L 401
B/W : H
SECAM : L
PB 9V
ID AMP Q405
SW 9V
KILLER AMP
TP423
CONV. BAL.
MAIN CONV
TP404 PB COLOR
R446 CONV. BALANCE
Q402
FREQUENCY DISCRIMINATOR
GATE1
GATE2
1/8 COUNT DOWN
DECODER DET
VXO
AMP Q411,407
EQ 401
LPF 402
E. SW Q408
PB FM OUT (to PB Y CIRCUIT)
from FM MO
REC
PB
DR


IC401
LPF
R437
X401
XB401
Fs + 1/8 Fh
OSC BLOCK
TP403
VCO
25 Hz
CH-1 CH-2
SECAM : L
E.SW Q402
DRUM FF
SW 9V
AFC
R427
9V
7V
SYNC SIGNAL IN
4.43MHz VCO
SUB CONV.
4 PHASE ROTATOR
1/4 COUNT DOWN
160 fH VCO
ACC DET
APC DET
KILLER DET
BPF 402
1/160 COUNT DOWN
AFC DET
1/2 H PULSE KILLER
BURST GATE
REC / PB SW
BPF 401
ACC AMP
MAIN CONV. KILLER AMP
RECORDING COLOR SIGNAL PATH
LPF 401
R411
REC COLOR LEVEL
E F Q403
REC FM SIGNAL IN (from REC Y CIRCUIT)
IC103
REC AMP-1
REC AMP-2
REC 9V
P.B 9V
E SW Q129
E SW Q128
R264
R266
R268
C223
C226
R260
R265
REC FM OUT TP123
TP124 REC FM OUT
CN7
CH-1
CH-2
CN1
YLW
GRN
BRN
RED
I6 HEAD CONN.
REC CURRENT
CH-1 VIDEO HEADS
CH-2
ROTARY TRANS
PLAYBACK COLOR SIGNAL PATH
SECAM : H
E.SW Q414
m E-E AMP
IC102
REC
PB
Y/C MIX
SQUELCH
AMP Q409,410
Q406
D L 401
R452
PB COLOR LEVEL
B/W : H
SECAM : L
PB 9V
ID AMP Q405
PB Y SIGNAL IN (from IC102-14)
SW 9V
O CIRCUIT)
TP423
CONV. BAL.
KILLER AMP
APC DET
ACC DET
ACC AMP
BPF 401
MAIN CONV
TP404
PB COLOR
R446
CONV. BALANCE
25Hz
CH-1 CH-2
Q402
DRUM FF
FREQUENCY DISCRIMINATOR
GATE1
1/160 COUNT DOWN
1/4 COUNT DOWN
1/8 COUNT DOWN
GATE2
DECODER DET
AMP Q411,407
EQ 401
LPF 402
E. SW Q408
SECAM : L
PB FM OUT (to PB Y CIRCUIT)
from FM MOD
SW AMP
CH-1 PRE AMP
CH-2 PRE AMP
C186/C187 HEAD RESONANCE
R200
C186
R201
C187
TP122
E SW Q126
E SW Q127
R200/R201 QUALITY FACTOR
REC CURRENT
E-E 9V
DRUM FF
VXO
4.43MHz VCO
SUB CONV.
4 PHASE ROTATOR
1/4 COUNT DOWN
160 fH VCO
BURST GATE
1/2 H PULSE KILLER
XB401
TP403
VCO
OSC BLOCK
Fs + 1/8 Fh
X401
SYNC SIGNAL IN

Tuner/ZF – Blockdarstellung · Tuner/IF block diagram   Typ -A-, -B-

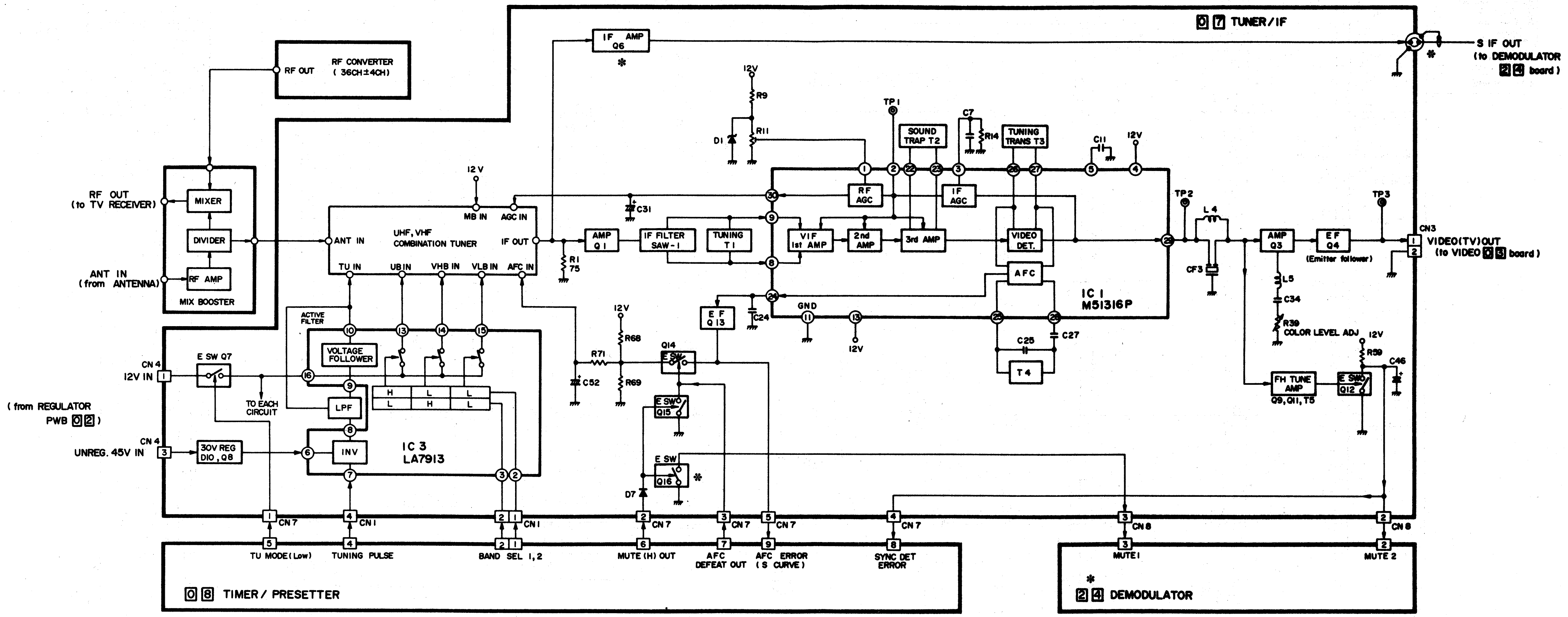


07 TUNER/IF
RF CONVERTER (36CH±4CH)
RF OUT
RF OUT (to TV RECEIVER)
MIXER
DIVIDER
RF AMP
ANT IN (from ANTENNA)
MIX BOOSTER
12 V
MB IN
AGC IN
UHF, VHF COMBINATION TUNER
ANT IN
IF OUT
TU IN
UB IN
VHB IN
VLB IN
AFC IN
R1 75
IF AMP Q6
*
C31
AMP Q1
IF FILTER SAW-1
TUNING T1
12V
R9
R11
D1
TP1
SOUND TRAP T2
C7
R14
TUNING TRANS T3
C11
12V
RF AGC
IF AGC
VIF 1st AMP
2nd AMP
3rd AMP
VIDEO DET.
AFC
IC 1 M51316P
GND
12V
C25
C27
T4
E F Q13
C24
12V
R68
R71
C52
R69
Q14 E SW
E SW Q15
E SW Q16
*
D7
ACTIVE FILTER
VOLTAGE FOLLOWER
LPF
INV
IC 3 LA7913
H L L
L H L
CN 4
12V IN
E SW Q7
TO EACH CIRCUIT
(from REGULATOR PWB 02)
CN 4
UNREG. 45V IN
30V REG D10, Q8
CN 7
CN 1
CN 1
CN 7
CN 7
CN 7
CN 7
CN 8
CN 8
TU MODE (Low)
TUNING PULSE
BAND SEL 1, 2
MUTE (H) OUT
AFC DEFEAT OUT
AFC ERROR (S CURVE)
SYNC DET ERROR
08 TIMER / PRESETTER
MUTE 1
MUTE 2
*
24 DEMODULATOR
S IF OUT (to DEMODULATOR 24 board)
TP2
L4
CF3
AMP Q3
E F Q4 (Emitter follower)
TP3
CN3
VIDEO (TV) OUT (to VIDEO 03 board)
L5
C34
R39 COLOR LEVEL ADJ
12V
R59
C46
FH TUNE AMP Q9, Q11, T5
E SW Q12

* nur bei Stereo-Videorecordern
at Stereo Videorecorder only

Tuner/ZF – Blockdarstellung · Tuner/IF block diagram Typ -A-, -B-

Tim



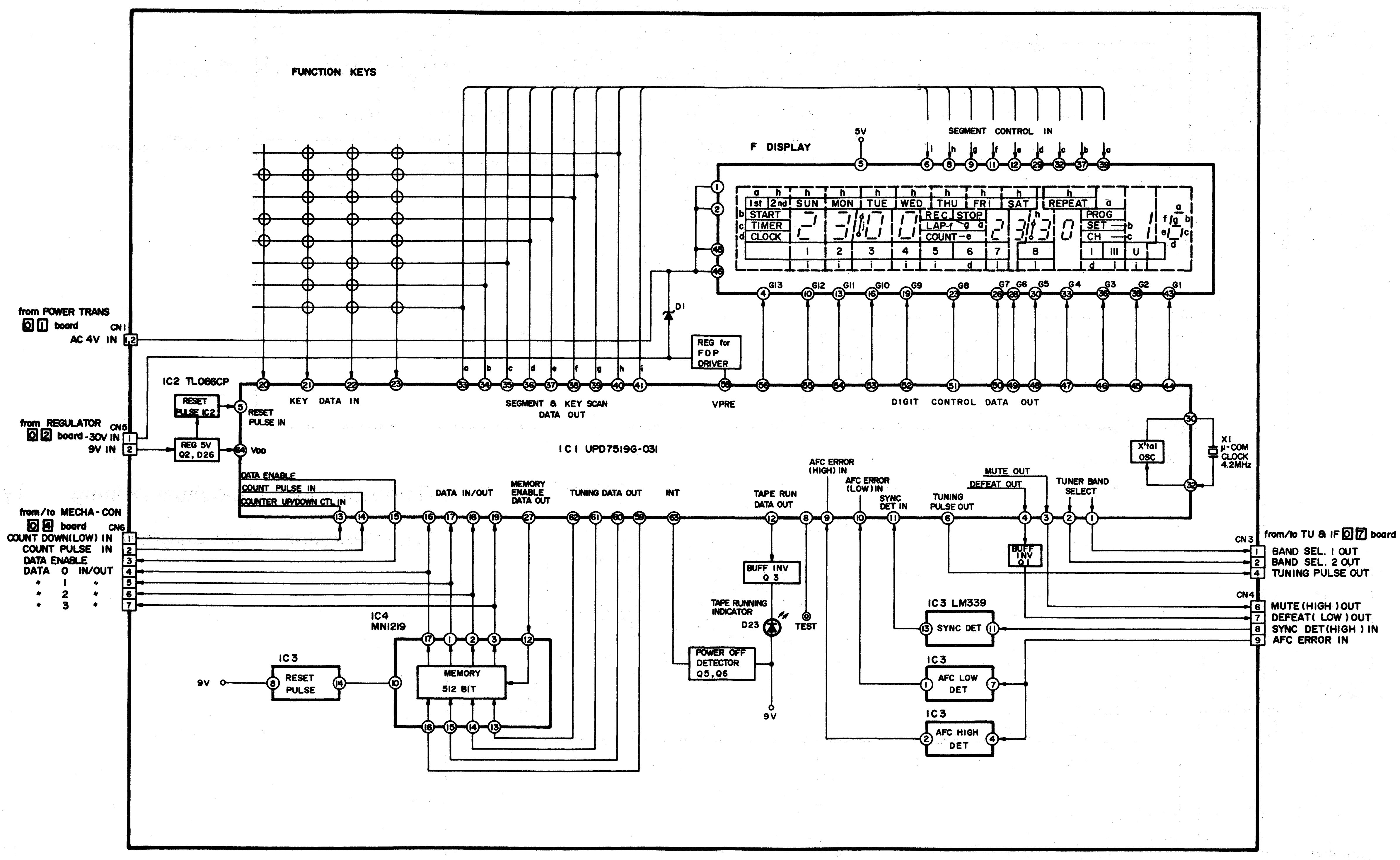
0 7 TUNER/IF
RF CONVERTER (36CH±4CH)
RF OUT
RF OUT (to TV RECEIVER)
ANT IN (from ANTENNA)
MIXER
DIVIDER
RF AMP
MIX BOOSTER
12 V
MB IN
AGC IN
ANT IN
UHF, VHF COMBINATION TUNER
IF OUT
TU IN
UB IN
VHB IN
VLB IN
AFC IN
IF AMP Q6
AMP Q1
IF FILTER SAW-1
TUNING T1
R1 75
C31
12V
R9
R11
D1
TP1
SOUND TRAP T2
C7
R14
TUNING TRANS T3
C11
12V
RF AGC
IF AGC
VIF 1st AMP
2nd AMP
3rd AMP
VIDEO DET.
AFC
IC 1 M51316P
GND
12V
C25
C27
T4
C24
E F Q 13
TP2
L4
CF3
TP3
AMP Q3
E F Q4
(Emitter follower)
L5
C34
R39 COLOR LEVEL ADJ
12V
R59
C46
FH TUNE AMP Q9, Q11, T5
E SW Q12
CN3
VIDEO(TV)OUT (to VIDEO 0 3 board)
S IF OUT (to DEMODULATOR 2 4 board)
CN 4
12V IN
(from REGULATOR PWB 0 2)
CN 4
UNREG. 45V IN
E SW Q7
TO EACH CIRCUIT
30V REG D10, Q8
ACTIVE FILTER
VOLTAGE FOLLOWER
LPF
INV
H L L
L H L
IC 3 LA7913
12V
R68
R71
C52
R69
Q14
E SW
E SW Q15
E SW Q16
D7
CN 7
CN 1
CN 8
TU MODE (Low)
TUNING PULSE
BAND SEL 1,2
MUTE (H) OUT
AFC DEFEAT OUT
AFC ERROR (S CURVE)
SYNC DET ERROR
MUTE 1
MUTE 2
0 8 TIMER/ PRESETTER
2 4 DEMODULATOR

✻ nur bei Stereo-Videorecordern
at Stereo Videorecorder only

Timer/Einsteller – Blockdarstellung · Timer/Presetter block diagram Typ -A-, -B-

S IF OUT
(to DEMODULATOR 24 board)

EO(TV)OUT
VIDEO 03 board)

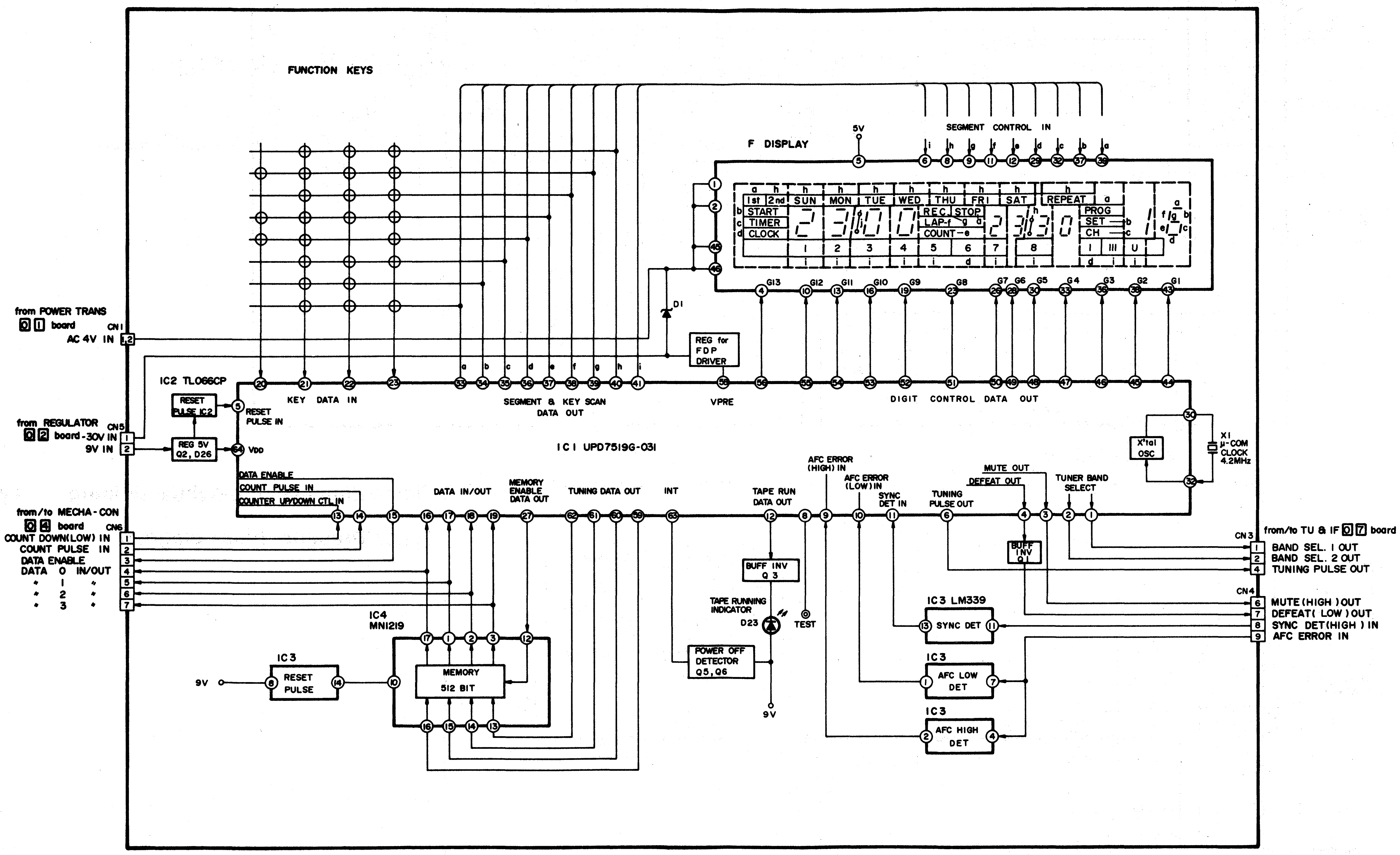


FUNCTION KEYS
F DISPLAY
5V
SEGMENT CONTROL IN
1st 2nd SUN MON TUE WED THU FRI SAT REPEAT
START
TIMER
CLOCK
REC STOP
LAP-f
COUNT-e
PROG
SET
CH
1 2 3 4 5 6 7 8
I III U
G13 G12 G11 G10 G9 G8 G7 G6 G5 G4 G3 G2 G1
D1
REG for FDP DRIVER
from POWER TRANS 01 board
CN1
AC 4V IN
IC2 TL066CP
RESET PULSE IC2
RESET PULSE IN
KEY DATA IN
SEGMENT & KEY SCAN DATA OUT
VPRE
DIGIT CONTROL DATA OUT
from REGULATOR 02 board
CN5
-30V IN
9V IN
REG 5V Q2, D26
VDD
IC1 UPD7519G-031
X'tal OSC
X1 μ-COM CLOCK 4.2MHz
DATA ENABLE
COUNT PULSE IN
COUNTER UP/DOWN CTL IN
DATA IN/OUT
MEMORY ENABLE DATA OUT
TUNING DATA OUT
INT
TAPE RUN DATA OUT
AFC ERROR (HIGH) IN
AFC ERROR (LOW) IN
SYNC DET IN
TUNING PULSE OUT
MUTE OUT
DEFEAT OUT
TUNER BAND SELECT
from/to MECHA-CON 04 board
CN6
COUNT DOWN(LOW) IN
COUNT PULSE IN
DATA ENABLE
DATA 0 IN/OUT
" 1 "
" 2 "
" 3 "
BUFF INV Q3
TAPE RUNNING INDICATOR
D23
TEST
BUFF INV Q1
from/to TU & IF 07 board
CN3
BAND SEL. 1 OUT
BAND SEL. 2 OUT
TUNING PULSE OUT
CN4
MUTE(HIGH)OUT
DEFEAT(LOW)OUT
SYNC DET(HIGH) IN
AFC ERROR IN
IC4 MN1219
MEMORY 512 BIT
IC3
RESET PULSE
9V
POWER OFF DETECTOR Q5, Q6
IC3 LM339
SYNC DET
IC3
AFC LOW DET
IC3
AFC HIGH DET

Timer/Einsteller – Blockdarstellung · Timer/Presetter block diagram Typ -A-, -B-

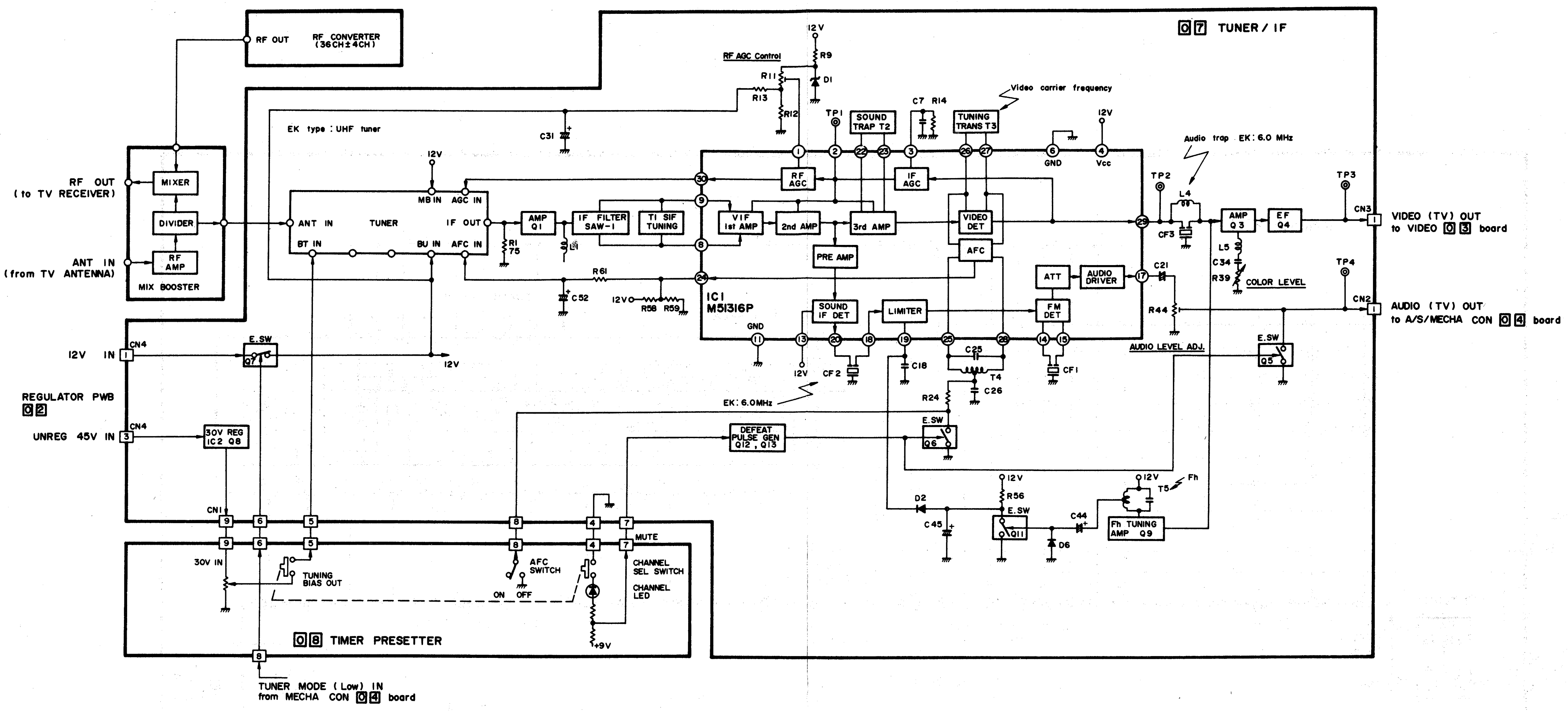
—— S IF OUT
(to DEMODULATOR 2 4 board)

EO(TV)OUT
VIDEO 0 3 board)



FUNCTION KEYS
F DISPLAY
5V
SEGMENT CONTROL IN
a h
1st 2nd
SUN
MON
TUE
WED
THU
FRI
SAT
REPEAT
START
TIMER
CLOCK
REC.
STOP
LAP-f
COUNT-e
PROG
SET
CH
1 2 3 4 5 6 7 8
I III U
G13 G12 G11 G10 G9 G8 G7 G6 G5 G4 G3 G2 G1
D1
REG for FDP DRIVER
from POWER TRANS 0 1 board
CN1
AC 4V IN 1,2
IC2 TL066CP
RESET PULSE IC2
RESET PULSE IN
KEY DATA IN
SEGMENT & KEY SCAN DATA OUT
VPRE
DIGIT CONTROL DATA OUT
from REGULATOR 0 2 board
CN5
-30V IN 1
9V IN 2
REG 5V Q2, D26
VDD
IC1 UPD7519G-031
X'tal OSC
X1 µ-COM CLOCK 4.2MHz
DATA ENABLE
COUNT PULSE IN
COUNTER UP/DOWN CTL IN
DATA IN/OUT
MEMORY ENABLE DATA OUT
TUNING DATA OUT
INT
TAPE RUN DATA OUT
AFC ERROR (HIGH) IN
AFC ERROR (LOW) IN
SYNC DET IN
TUNING PULSE OUT
MUTE OUT
DEFEAT OUT
TUNER BAND SELECT
from/to MECHA-CON 0 4 board
CN6
COUNT DOWN(LOW) IN 1
COUNT PULSE IN 2
DATA ENABLE 3
DATA 0 IN/OUT 4
" 1 " 5
" 2 " 6
" 3 " 7
IC4 MN1219
MEMORY 512 BIT
IC3
RESET PULSE
9V
BUFF INV Q3
TAPE RUNNING INDICATOR
D23
TEST
POWER OFF DETECTOR Q5, Q6
9V
BUFF INV Q1
IC3 LM339
SYNC DET
IC3
AFC LOW DET
IC3
AFC HIGH DET
from/to TU & IF 0 7 board
CN3
1 BAND SEL. 1 OUT
2 BAND SEL. 2 OUT
4 TUNING PULSE OUT
CN4
6 MUTE (HIGH) OUT
7 DEFEAT (LOW) OUT
8 SYNC DET (HIGH) IN
9 AFC ERROR IN

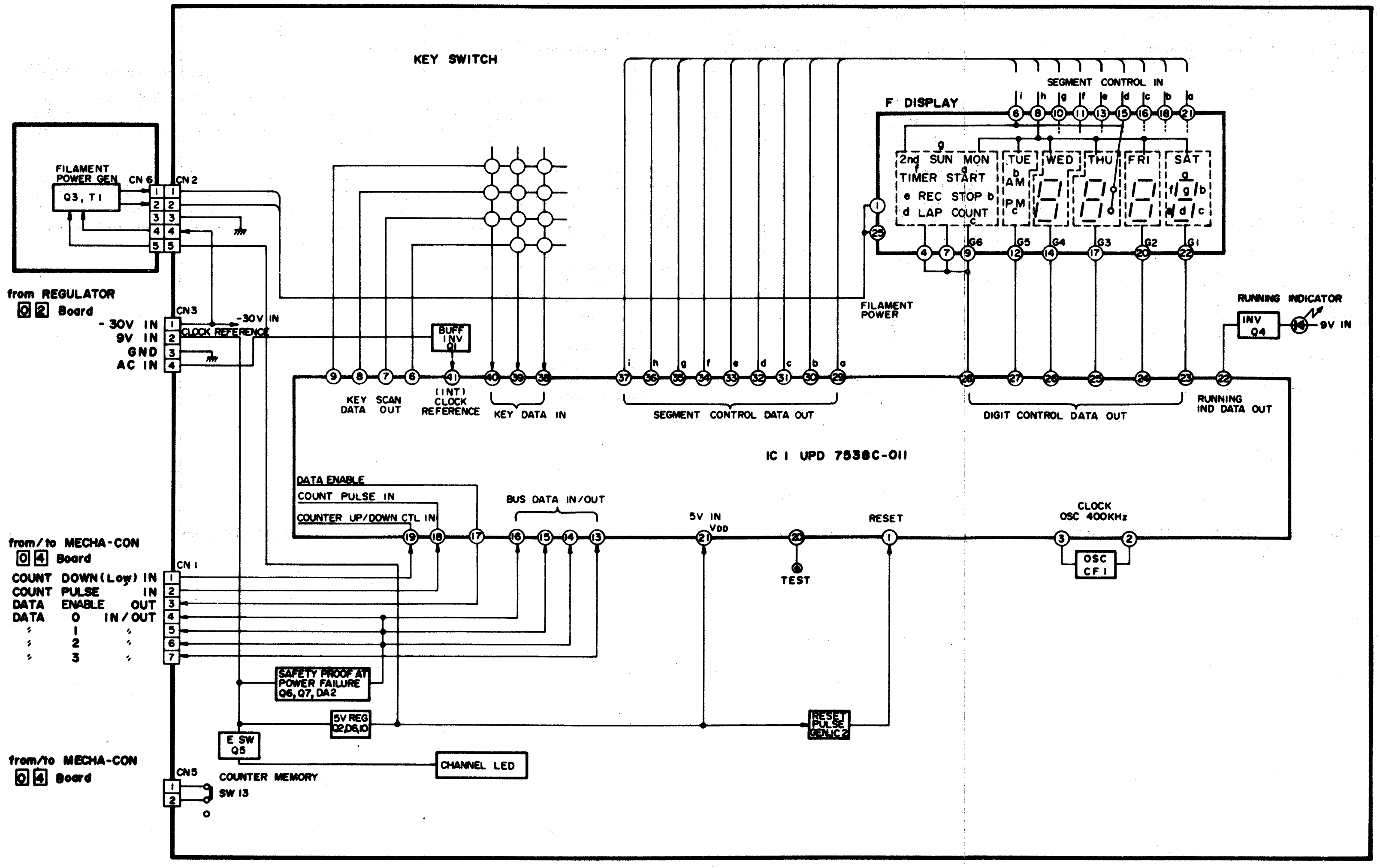
Tuner/ZF – Blockdarstellung · Tuner/IF block diagram   Typ -C-, -D-



RF OUT
RF CONVERTER (36CH±4CH)
RF OUT (to TV RECEIVER)
ANT IN (from TV ANTENNA)
MIXER
DIVIDER
RF AMP
MIX BOOSTER
EK type : UHF tuner
ANT IN
TUNER
IF OUT
BT IN
BU IN
AFC IN
MB IN
AGC IN
12V
C31
AMP Q1
IF FILTER SAW-1
TI SIF TUNING
L11
R1 75
R61
C52
R58 R59
RF AGC Control
R9
R11
R13
R12
D1
TP1
SOUND TRAP T2
C7 R14
TUNING TRANS T3
Video carrier frequency
GND
Vcc
RF AGC
IF AGC
VIF 1st AMP
2nd AMP
3rd AMP
PRE AMP
VIDEO DET
AFC
SOUND IF DET
LIMITER
FM DET
ATT
AUDIO DRIVER
IC1 M51316P
CF2
C18
C25
T4
C26
R24
CF1
EK: 6.0MHz
07 TUNER / IF
Audio trap EK: 6.0 MHz
TP2
L4
CF3
AMP Q3
EF Q4
L5
C34
R39
COLOR LEVEL
TP3
TP4
C21
R44
AUDIO LEVEL ADJ.
CN3
CN2
VIDEO (TV) OUT to VIDEO 03 board
AUDIO (TV) OUT to A/S/MECHA CON 04 board
E.SW
Q5
Q6
DEFEAT PULSE GEN Q12, Q13
D2
R56
Q11
C45
C44
D6
T5
Fh
Fh TUNING AMP Q9
12V IN
CN4
Q7
REGULATOR PWB 02
UNREG 45V IN
30V REG IC2 Q8
CN1
MUTE
30V IN
TUNING BIAS OUT
AFC SWITCH
ON OFF
CHANNEL SEL SWITCH
CHANNEL LED
+9V
08 TIMER PRESETTER
TUNER MODE (Low) IN from MECHA CON 04 board

Timer/Einsteller – Blockdarstellung   Typ -C-, -D-

Timer/Presetter block diagram

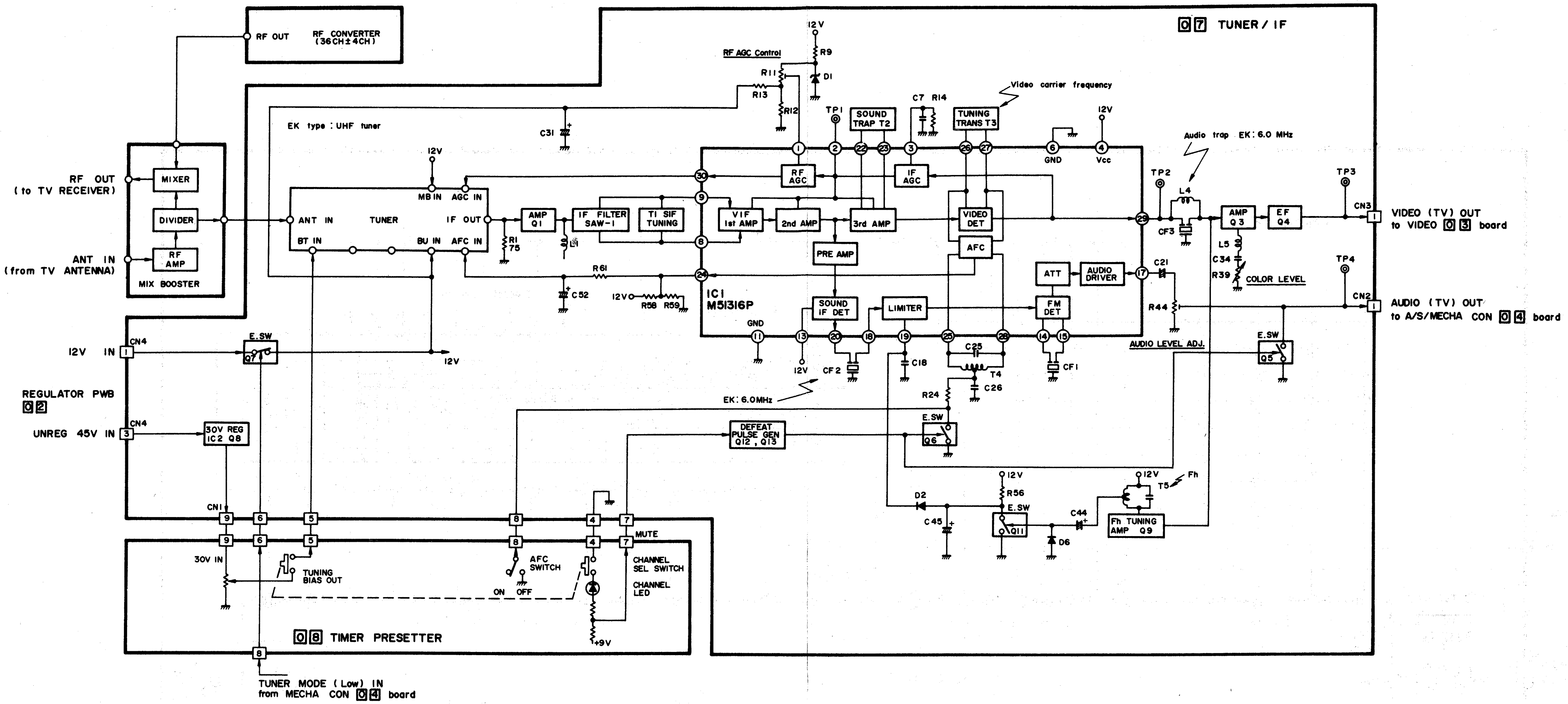


KEY SWITCH
FILAMENT POWER GEN
Q3, T1
CN6
CN2
from REGULATOR 02 Board
CN3
-30V IN
9V IN
GND
AC IN
-30V IN
CLOCK REFERENCE
BUFF INV Q1
KEY SCAN DATA OUT
(INT) CLOCK REFERENCE
KEY DATA IN
SEGMENT CONTROL DATA OUT
DIGIT CONTROL DATA OUT
RUNNING IND DATA OUT
F DISPLAY
SEGMENT CONTROL IN
2nd SUN MON TUE WED THU FRI SAT
TIMER START
REC STOP
LAP COUNT
AM PM
FILAMENT POWER
RUNNING INDICATOR
INV Q4
9V IN
IC1 UPD 7538C-011
DATA ENABLE
COUNT PULSE IN
COUNTER UP/DOWN CTL IN
BUS DATA IN/OUT
5V IN
VDD
TEST
RESET
CLOCK OSC 400KHz
OSC CF1
from/to MECHA-CON 04 Board
CN1
COUNT DOWN (Low) IN
COUNT PULSE IN
DATA ENABLE OUT
DATA 0 IN/OUT
1
2
3
SAFETY PROOF AT POWER FAILURE Q6, Q7, DA2
5V REG
RESET PULSE GEN IC2
E SW Q5
CHANNEL LED
from/to MECHA-CON 04 Board
CN5
COUNTER MEMORY SW 13

Gesamtve

24	DEMODULATOR
23	
22	TIMER SUB
21	
20	MECHACON SUB
19	CAPSTAN FG
18	CASSE HOUSING
17	FULL ERASE HEAD
16	HEAD CONNECT
15	CASSETTE LAMP
14	REEL SENSOR
13	END SENSOR
12	A/CTL HEAD
11	RF TERMINAL
10	TERMINAL
09	
08	TIMER/PRE-SET
07	TUNER/IF
06	OPERATION
05	AUDIO
04	AUD/SERVO/MECHAC
03	VIDEO
02	REGULATOR
01	POWER TRANS
NO	NAME

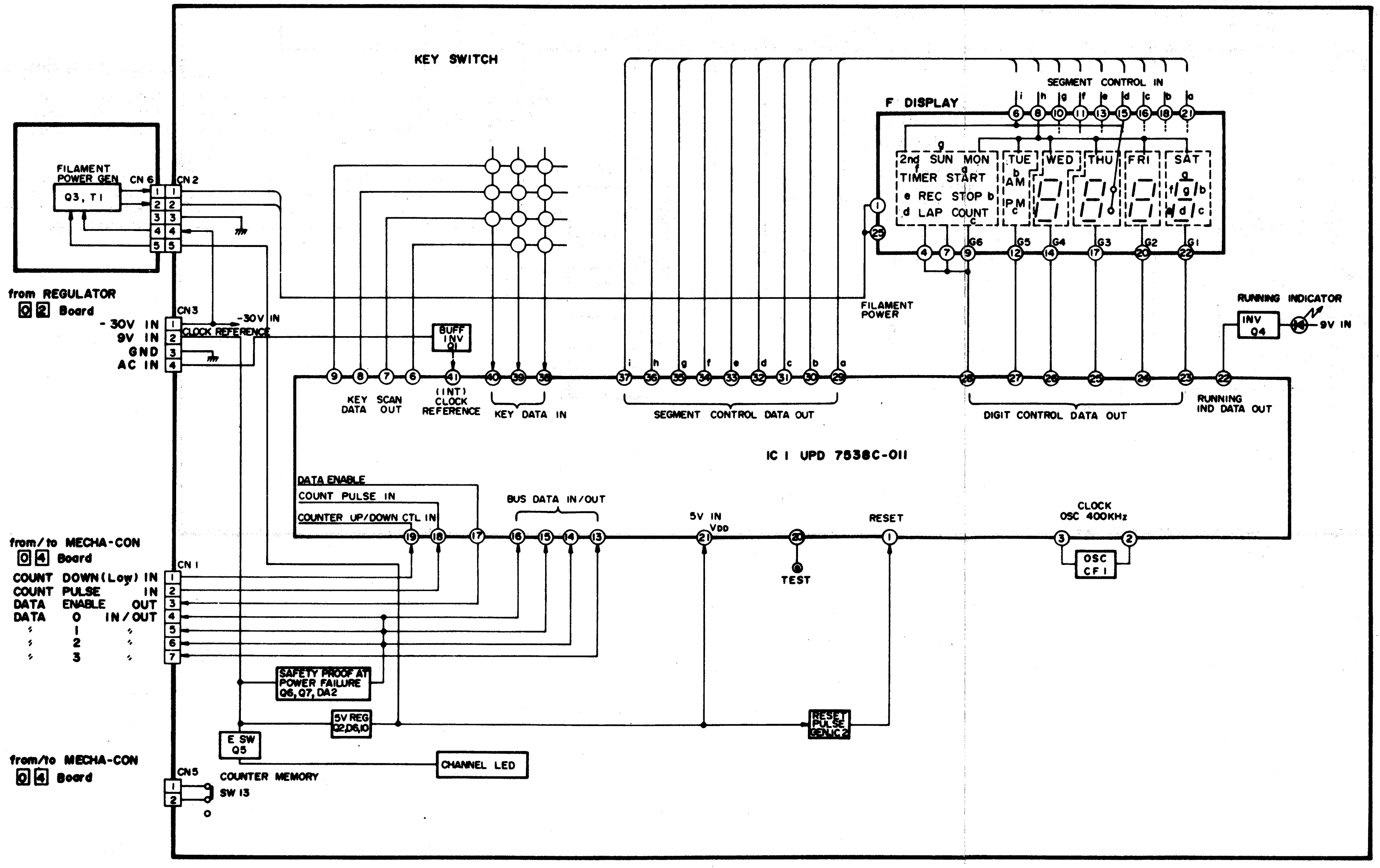
Tuner/ZF – Blockdarstellung · Tuner/IF block diagram Typ -C-, -D-


RF OUT
RF CONVERTER (36CH±4CH)
07 TUNER / IF
RF OUT (to TV RECEIVER)
ANT IN (from TV ANTENNA)
MIXER
DIVIDER
RF AMP
MIX BOOSTER
EK type : UHF tuner
12V
MB IN
AGC IN
ANT IN
TUNER
IF OUT
BT IN
BU IN
AFC IN
AMP Q1
IF FILTER SAW-1
T1 SIF TUNING
R1 75
L1
C31
R61
C52
12V
R58
R59
RF AGC Control
R11
R13
R12
R9
D1
TP1
SOUND TRAP T2
C7
R14
TUNING TRANS T3
Video carrier frequency
12V
GND
Vcc
RF AGC
IF AGC
VIF 1st AMP
2nd AMP
3rd AMP
VIDEO DET
AFC
PRE AMP
SOUND IF DET
LIMITER
FM DET
ATT
AUDIO DRIVER
IC1 M51316P
GND
12V
CF2
C18
C25
T4
C26
CF1
R24
EK: 6.0MHz
Audio trap EK: 6.0 MHz
TP2
L4
CF3
AMP Q3
EF Q4
TP3
CN3
L5
C34
R39
COLOR LEVEL
TP4
C21
R44
CN2
AUDIO LEVEL ADJ.
E.SW
Q5
VIDEO (TV) OUT to VIDEO 03 board
AUDIO (TV) OUT to A/S/MECHA CON 04 board
12V IN
CN4
E.SW
Q7
12V
REGULATOR PWB 02
UNREG 45V IN
30V REG IC2 Q8
DEFEAT PULSE GEN Q12, Q13
E.SW
Q6
D2
C45
12V
R56
E.SW
Q11
D6
C44
12V
T5
Fh
Fh TUNING AMP Q9
CN1
30V IN
TUNING BIAS OUT
AFC SWITCH
ON OFF
MUTE
CHANNEL SEL SWITCH
CHANNEL LED
+9V
08 TIMER PRESETTER
TUNER MODE (Low) IN from MECHA CON 04 board

NO	NAME
24	DEMODULATOR
23	
22	TIMER SUB
21	
20	MECHACON SUB
19	CAPSTAN FG
18	CASSE HOUSING
17	FULL ERASE HEAD
16	HEAD CONNECT
15	CASSETTE LAMP
14	REEL SENSOR
13	END SENSOR
12	A/CTL HEAD
11	RF TERMINAL
10	TERMINAL
09	
08	TIMER/PRE-SET
07	TUNER/IF
06	OPERATION
05	AUDIO
04	AUD/SERVO/MECHAC
03	VIDEO
02	REGULATOR
01	POWER TRANS

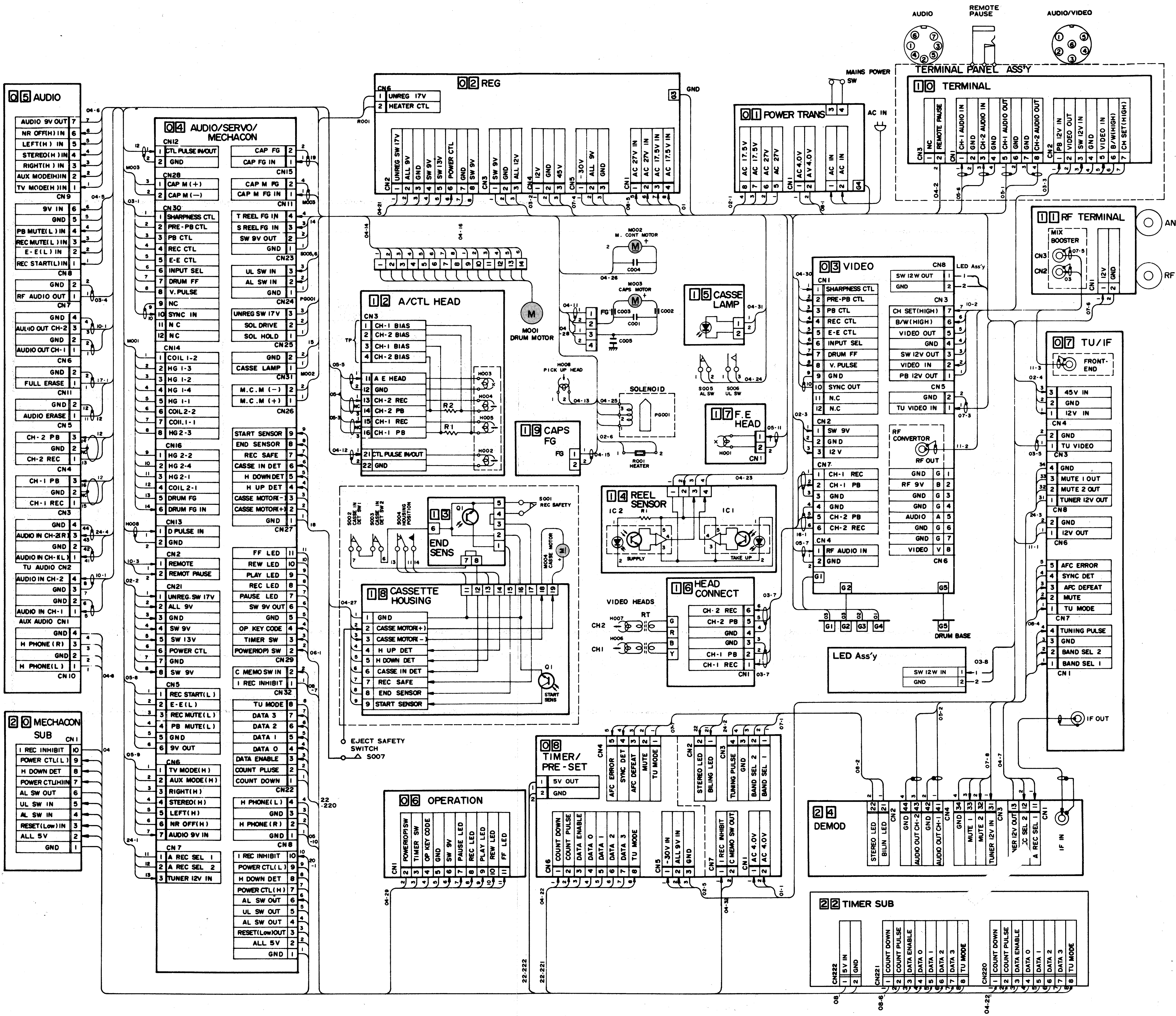
Timer/Einsteller – Blockdarstellung Typ -C-, -D-

Timer/Presetter block diagram


KEY SWITCH
FILAMENT POWER GEN
Q3, T1
CN6
CN2
from REGULATOR 02 Board
CN3
-30V IN
9V IN
GND
AC IN
-30V IN
CLOCK REFERENCE
BUFF INV Q1
F DISPLAY
SEGMENT CONTROL IN
2nd SUN MON TUE WED THU FRI SAT
TIMER START
AM
PM
REC STOP
LAP COUNT
FILAMENT POWER
RUNNING INDICATOR
INV Q4
-9V IN
KEY SCAN DATA OUT
(INT) CLOCK REFERENCE
KEY DATA IN
SEGMENT CONTROL DATA OUT
DIGIT CONTROL DATA OUT
RUNNING IND DATA OUT
IC1 UPD 7538C-011
DATA ENABLE
COUNT PULSE IN
COUNTER UP/DOWN CTL IN
BUS DATA IN/OUT
5V IN
VDD
TEST
RESET
CLOCK OSC 400KHz
OSC CF1
from/to MECHA-CON 04 Board
CN1
COUNT DOWN (Low) IN
COUNT PULSE IN
DATA ENABLE OUT
DATA 0 IN/OUT
1
2
3
SAFETY PROOF AT POWER FAILURE Q6, Q7, DA2
5V REG Q2, D8, 10
RESET PULSE GEN IC2
E SW Q5
CHANNEL LED
from/to MECHA-CON 04 Board
CN5
COUNTER MEMORY SW13

Gesamtverdrahtungsplan · Overall wiring diagram Typ -A-

NO	NAME
24	DEMODULATOR
23	
22	TIMER SUB
21	
20	MECHACON SUB
19	CAPSTAN FG
18	CASSE HOUSING
17	FULL ERASE HEAD
16	HEAD CONNECT
15	CASSETTE LAMP
14	REEL SENSOR
13	END SENSOR
12	A/CTL HEAD
11	RF TERMINAL
10	TERMINAL
09	
08	TIMER/PRE-SET
07	TUNER/IF
06	OPERATION
05	AUDIO
04	AUD/SERVO/MECHACON
03	VIDEO
02	REGULATOR
01	POWER TRANS

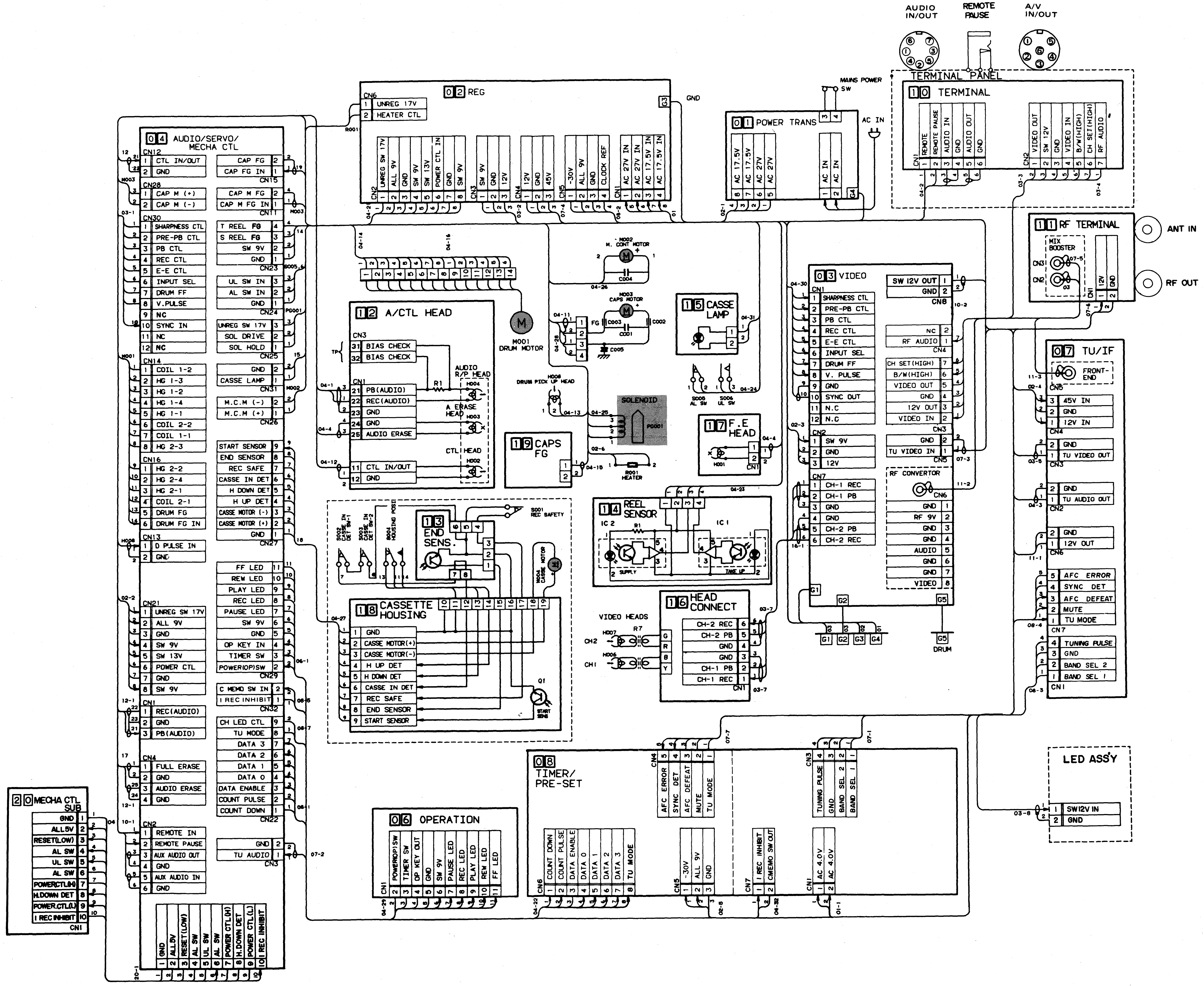


AUDIO
REMOTE PAUSE
AUDIO/VIDEO
TERMINAL PANEL ASS'Y
10 TERMINAL
MAINS POWER SW
AC IN
01 POWER TRANS
02 REG
05 AUDIO
04 AUDIO/SERVO/MECHACON
12 A/CTL HEAD
M001 DRUM MOTOR
M002 M. CONT MOTOR
M003 CAPS MOTOR
15 CASSE LAMP
11 RF TERMINAL
ANT IN
RF OUT
MIX BOOSTER
03 VIDEO
07 TU/IF
FRONT-END
H008 PICK UP HEAD
SOLENOID
S005 AL SW
S006 UL SW
19 CAPS FG
R001 HEATER
17 F.E HEAD
14 REEL SENSOR
SUPPLY
TAKE UP
13 END SENS
S001 REC SAFETY
18 CASSETTE HOUSING
M004 CASSE MOTOR
START SENS
16 HEAD CONNECT
VIDEO HEADS
RF CONVERTOR
LED Ass'y
DRUM BASE
EJECT SAFETY SWITCH S007
20 MECHACON SUB
06 OPERATION
08 TIMER/PRE-SET
24 DEMOD
22 TIMER SUB
IF OUT
IF IN

-C-, -D-

Gesamtverdrahtungsplan · Overall wiring diagram Typ -B-

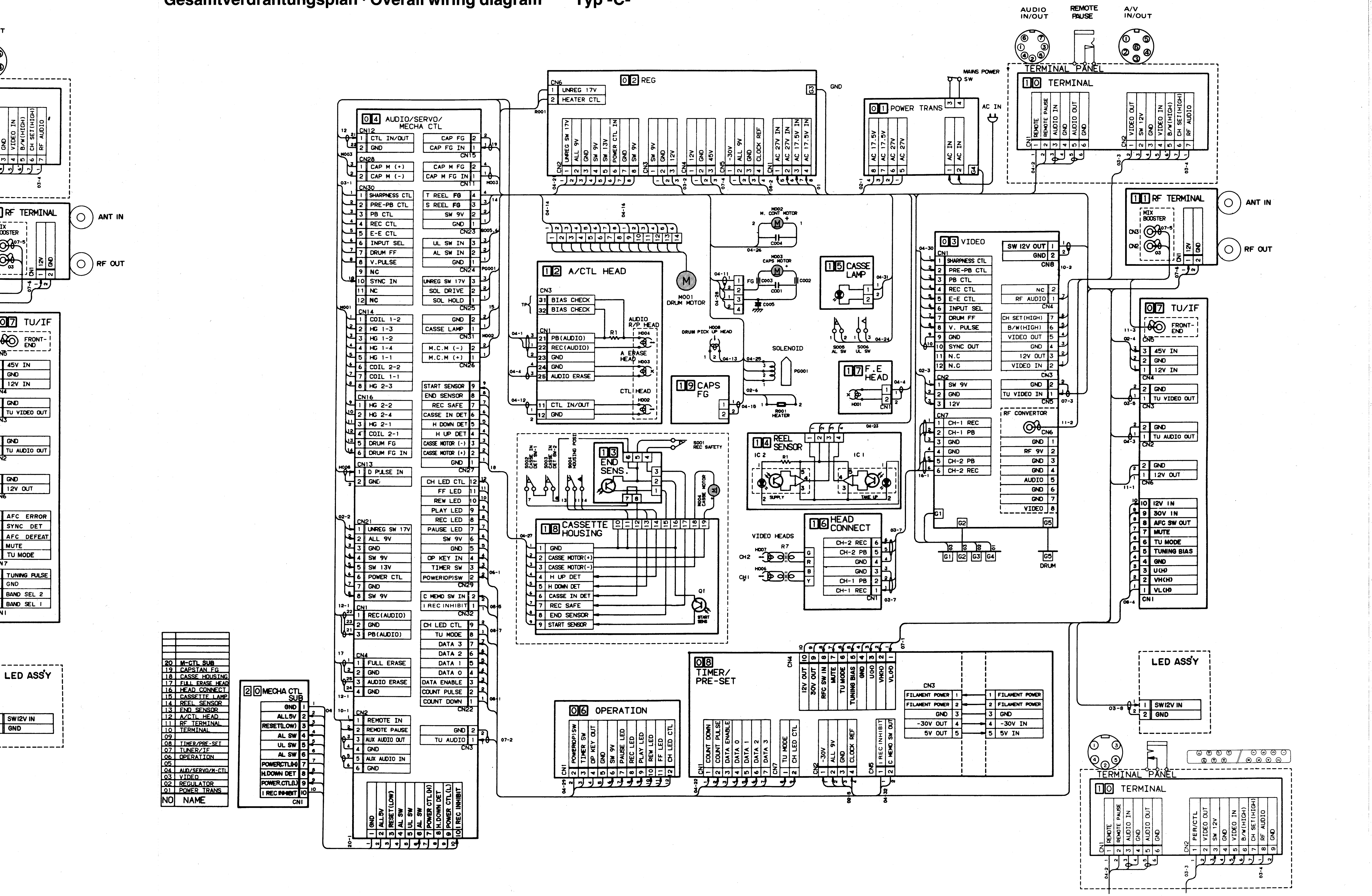
Gesamtvei


AUDIO IN/OUT
REMOTE PAUSE
A/V IN/OUT
TERMINAL PANEL
10 TERMINAL
REMOTE
REMOTE PAUSE
AUDIO IN
GND
AUDIO OUT
GND
VIDEO OUT
SW 12V
GND
VIDEO IN
B/W(HIGH)
CH SET(HIGH)
RF AUDIO
CN1
CN2
MAINS POWER SW
01 POWER TRANS
AC IN
AC 17.5V
AC 17.5V
AC 27V
AC 27V
GND
02 REG
CN6
UNREG 17V
HEATER CTL
UNREG SW 17V
ALL 9V
GND
SW 9V
SW 13V
POWER CTL IN
GND
SW 9V
GND
12V
12V
GND
45V
-30V
ALL 9V
GND
CLOCK REF
AC 27V IN
AC 27V IN
AC 17.5V IN
AC 17.5V IN
CN2
CN3
CN4
CN5
CN1
R001
11 RF TERMINAL
MIX BOOSTER
ANT IN
RF OUT
04 AUDIO/SERVO/ MECHA CTL
CN12
CTL IN/OUT
GND
CN28
CAP M (+)
CAP M (-)
CN30
SHARPNESS CTL
PRE-PB CTL
PB CTL
REC CTL
E-E CTL
INPUT SEL
DRUM FF
V.PULSE
NC
SYNC IN
NC
NC
CN14
COIL 1-2
HG 1-3
HG 1-2
HG 1-4
HG 1-1
COIL 2-2
COIL 1-1
HG 2-3
CN16
HG 2-2
HG 2-4
HG 2-1
COIL 2-1
DRUM FG
DRUM FG IN
CN13
D PULSE IN
GND
CN21
UNREG SW 17V
ALL 9V
GND
SW 9V
SW 13V
POWER CTL
GND
SW 9V
CN1
REC(AUDIO)
GND
PB(AUDIO)
CN4
FULL ERASE
GND
AUDIO ERASE
GND
CN2
REMOTE IN
REMOTE PAUSE
AUX AUDIO OUT
GND
AUX AUDIO IN
GND
CAP FG
CAP FG IN
CN15
CAP M FG
CAP M FG IN
CN11
T REEL FG
S REEL FG
SW 9V
GND
CN23
UL SW IN
AL SW IN
GND
CN24
UNREG SW 17V
SOL DRIVE
SOL HOLD
CN25
GND
CASSE LAMP
CN31
M.C.M (-)
M.C.M (+)
CN26
START SENSOR
END SENSOR
REC SAFE
CASSE IN DET
H DOWN DET
H UP DET
CASSE MOTOR (-)
CASSE MOTOR (+)
GND
CN27
FF LED
REW LED
PLAY LED
REC LED
PAUSE LED
SW 9V
GND
OP KEY IN
TIMER SW
POWER(OP)SW
CN29
C MEMO SW IN
I REC INHIBIT
CN32
CH LED CTL
TU MODE
DATA 3
DATA 2
DATA 1
DATA 0
DATA ENABLE
COUNT PULSE
COUNT DOWN
CN22
GND
TU AUDIO
CN3
GND
ALL5V
RESET(LOW)
AL SW
UL SW
AL SW
POWER CTL(H)
H.DOWN DET
POWER CTL(L)
I REC INHIBIT
20 MECHA CTL SUB
GND
ALL5V
RESET(LOW)
AL SW
UL SW
AL SW
POWERCTL(H)
H.DOWN DET
POWER.CTL(L)
I REC INHIBIT
CN1
M001 DRUM MOTOR
M002 M. CONT MOTOR
M003 CAPS MOTOR
C004
C003
C001
C002
C005
FG
12 A/CTL HEAD
CN3
BIAS CHECK
BIAS CHECK
TP
CN1
PB(AUDIO)
REC(AUDIO)
GND
GND
AUDIO ERASE
CTL IN/OUT
GND
AUDIO R/P HEAD
A ERASE HEAD
CTL HEAD
H004
H003
H002
R1
H005 DRUM PICK UP HEAD
SOLENOID
P0001
19 CAPS FG
R001 HEATER
15 CASSE LAMP
S005 AL SW
S006 UL SW
17 F.E HEAD
H001
14 REEL SENSOR
IC 2
IC 1
R1
SUPPLY
TAKE UP
13 END SENS.
S002 CASSE IN DET SW-1
S003 CASSE IN DET SW-2
S004 HOUSING POSI
S001 REC SAFETY
M004 CASSE MOTOR
18 CASSETTE HOUSING
GND
CASSE MOTOR(+)
CASSE MOTOR(-)
H UP DET
H DOWN DET
CASSE IN DET
REC SAFE
END SENSOR
START SENSOR
Q1
START SENS
16 HEAD CONNECT
VIDEO HEADS
H007
H006
CH2
CH1
R7
CH-2 REC
CH-2 PB
GND
GND
CH-1 PB
CH-1 REC
CN1
03 VIDEO
CN1
SHARPNESS CTL
PRE-PB CTL
PB CTL
REC CTL
E-E CTL
INPUT SEL
DRUM FF
V. PULSE
GND
SYNC OUT
N.C
N.C
CN2
SW 9V
GND
12V
CN7
CH-1 REC
CH-1 PB
GND
GND
CH-2 PB
CH-2 REC
SW 12V OUT
GND
CN8
NC
RF AUDIO
CN4
CH SET(HIGH)
B/W(HIGH)
VIDEO OUT
GND
12V OUT
VIDEO IN
CN3
GND
TU VIDEO IN
CN5
RF CONVERTOR
CN6
GND
RF 9V
GND
GND
AUDIO
GND
GND
VIDEO
G1
G2
G3
G4
G5
DRUM
07 TU/IF
FRONT-END
CN5
45V IN
GND
12V IN
CN4
GND
TU VIDEO OUT
CN3
GND
TU AUDIO OUT
CN2
GND
12V OUT
CN6
AFC ERROR
SYNC DET
AFC DEFEAT
MUTE
TU MODE
CN7
TUNING PULSE
GND
BAND SEL 2
BAND SEL 1
CN1
06 OPERATION
POWER(OP)SW
TIMER SW
OP KEY OUT
GND
SW 9V
PAUSE LED
REC LED
PLAY LED
REW LED
FF LED
CN1
08 TIMER/ PRE-SET
AFC ERROR
SYNC DET
AFC DEFEAT
MUTE
TU MODE
TUNING PULSE
GND
BAND SEL 2
BAND SEL 1
COUNT DOWN
COUNT PULSE
DATA ENABLE
DATA 0
DATA 1
DATA 2
DATA 3
TU MODE
-30V
ALL 9V
GND
I REC INHIBIT
C MEMO SW OUT
AC 4.0V
AC 4.0V
CN6
CN5
CN7
CN1
CN4
CN3
LED ASS'Y
SW12V IN
GND
GND

20	M-CTL SUB
19	CAPSTAN FG
18	CASSE HOUSING
17	FULL ERASE HEAD
16	HEAD CONNECT
15	CASSETTE LAMP
14	REEL SENSOR
13	END SENSOR
12	A/CTL HEAD
11	RF TERMINAL
10	TERMINAL
09	
08	TIMER/PRE-SET
07	TUNER/IF
06	OPERATION
05	
04	AUD/SERVO/M-CTL
03	VIDEO
02	REGULATOR
01	POWER TRANS
NO	NAME

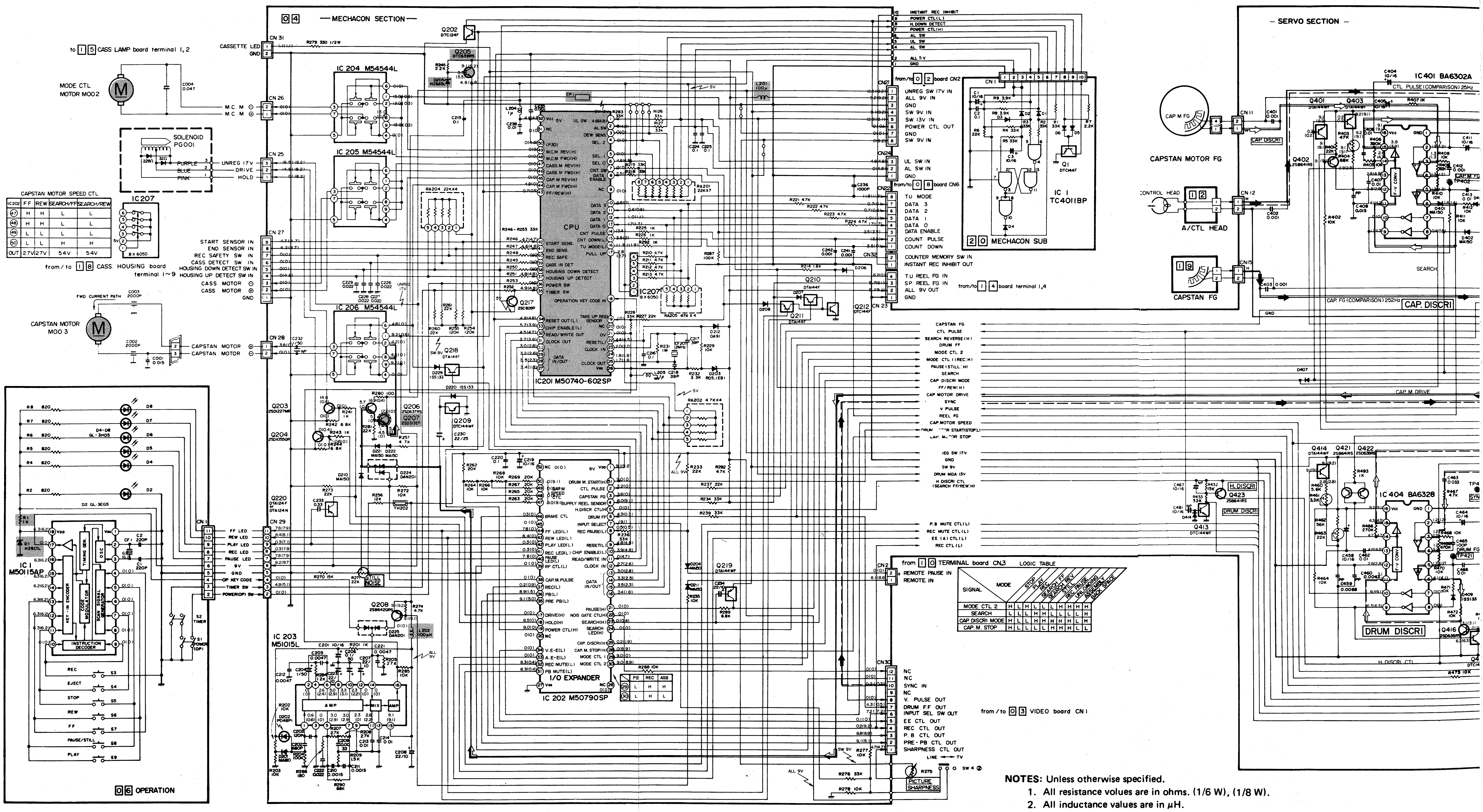
20	M-CTL SUB
19	CAPSTAN FG
18	CASSE HOUSING
17	FULL ERASE HEAD
16	HEAD CONNECT
15	CASSETTE LAMP
14	REEL SENSOR
13	END SENSOR
12	A/CTL HEAD
11	RF TERMINAL
10	TERMINAL
09	
08	TIMER/PRE-SET
07	TUNER/IF
06	OPERATION
05	
04	AUD/SERVO/M-CTL
03	VIDEO
02	REGULATOR
01	POWER TRANS
NO	NAME

Gesamtverdrahtungsplan · Overall wiring diagram Typ -C-


AUDIO IN/OUT
REMOTE PAUSE
A/V IN/OUT
TERMINAL PANEL
10 TERMINAL
11 RF TERMINAL
ANT IN
RF OUT
MIX BOOSTER
07 TU/IF
FRONT-END
LED ASS'Y
02 REG
MAINS POWER SW
01 POWER TRANS
AC IN
04 AUDIO/SERVO/MECHA CTL
03 VIDEO
12 A/CTL HEAD
M001 DRUM MOTOR
M002 M. CONT MOTOR
M003 CAPS MOTOR
15 CASSE LAMP
SOLENOID
R001 HEATER
19 CAPS FG
17 F.E HEAD
14 REEL SENSOR
13 END SENS.
18 CASSETTE HOUSING
S001 REC SAFETY
16 HEAD CONNECT
VIDEO HEADS
CH1
CH2
DRUM
08 TIMER/PRE-SET
06 OPERATION
20 MECHA CTL SUB
RF CONVERTOR

NO	NAME
20	M-CTL SUB
19	CAPSTAN FG
18	CASSE HOUSING
17	FULL ERASE HEAD
16	HEAD CONNECT
15	CASSETTE LAMP
14	REEL SENSOR
13	END SENSOR
12	A/CTL HEAD
11	RF TERMINAL
10	TERMINAL
09	
08	TIMER/PRE-SET
07	TUNER/IF
06	OPERATION
05	
04	AUD/SERVO/M-CTL
03	VIDEO
02	REGULATOR
01	POWER TRANS

Mechaniksteuer-, Servo-, Audio- und Bedienteil-Schaltungen · Mechacon, Servo, Audio and Operation circuits Typ -A-


04 — MECHACON SECTION —
— SERVO SECTION —
to 15 CASS LAMP board terminal 1, 2
CASSETTE LED
MODE CTL MOTOR M002
SOLENOID PG001
UNREG 17V
DRIVE
HOLD
IC 204 M54544L
IC 205 M54544L
IC 206 M54544L
IC207
BX6050
START SENSOR IN
END SENSOR IN
REC SAFETY SW IN
CASS DETECT SW IN
HOUSING DOWN DETECT SW IN
HOUSING UP DETECT SW IN
CASS MOTOR
from / to 18 CASS. HOUSING board terminal 1~9
FWD. CURRENT PATH
CAPSTAN MOTOR M003
CAPSTAN MOTOR
CPU
IC201 M50740-602SP
I/O EXPANDER
IC 202 M50790SP
IC 203 M51015L
AMP
MIX
IC 1 M50115AP
KEY-IN ENCODER
CODE MODULATOR
SCAN SIGNAL GENERATOR
TIMING GEN.
OSC
INSTRUCTION DECODER
FF LED
REW LED
PLAY LED
REC LED
PAUSE LED
OP KEY CODE
TIMER SW
POWER(OP) SW
REC
EJECT
STOP
REW
FF
PAUSE/STILL
PLAY
S2 TIMER
S1 POWER (OP)
06 OPERATION
IC 1 TC4011BP
20 MECHACON SUB
from/to 02 board CN2
from/to 08 board CN6
from/to 14 board terminal 1,4
from/to 03 VIDEO board CN1
INSTANT REC INHIBIT
POWER CTL(L)
H. DOWN DETECT
POWER CTL(H)
AL SW
UL SW
ALL 5V
GND
UNREG SW 17V IN
ALL 9V IN
SW 9V IN
SW 13V IN
POWER CTL OUT
TU MODE
DATA 3
DATA 2
DATA 1
DATA 0
DATA ENABLE
COUNT PULSE
COUNT DOWN
COUNTER MEMORY SW IN
INSTANT REC INHIBIT OUT
TU REEL FG IN
SP REEL FG IN
ALL 9V OUT
CAPSTAN FG
CTL PULSE
SEARCH REVERSE(H)
DRUM FF
MODE CTL 2
MODE CTL 1(REC:H)
PAUSE(STILL:H)
SEARCH
CAP DISCRI MODE
FF/REW(H)
CAP MOTOR DRIVE
SYNC
V. PULSE
REEL FG
CAP. MOTOR SPEED
CAP. MOTOR STOP
P.B MUTE CTL(L)
REC MUTE CTL(L)
EE (A) CTL(L)
REC CTL(L)
NC
SYNC IN
V. PULSE OUT
DRUM F.F OUT
INPUT SEL SW OUT
EE CTL OUT
REC CTL OUT
P. B CTL OUT
PRE-PB CTL OUT
SHARPNESS CTL OUT
PICTURE SHARPNESS
from 10 TERMINAL board CN3
REMOTE PAUSE IN
REMOTE IN
CAP M FG
CAPSTAN MOTOR FG
CONTROL HEAD
12 A/CTL HEAD
19 CAPSTAN FG
IC401 BA6302A
CTL PULSE (COMPARISON) 25Hz
CAP. FG (COMPARISON) 252Hz
CAP. DISCRI
DRUM DISCRI
H. DISCRI
IC 404 BA6328
F-V CONV
SEARCH
CAP. M. DRIVE
H. DISCRI CTL
TP421
TP422

CAPSTAN MOTOR SPEED CTL

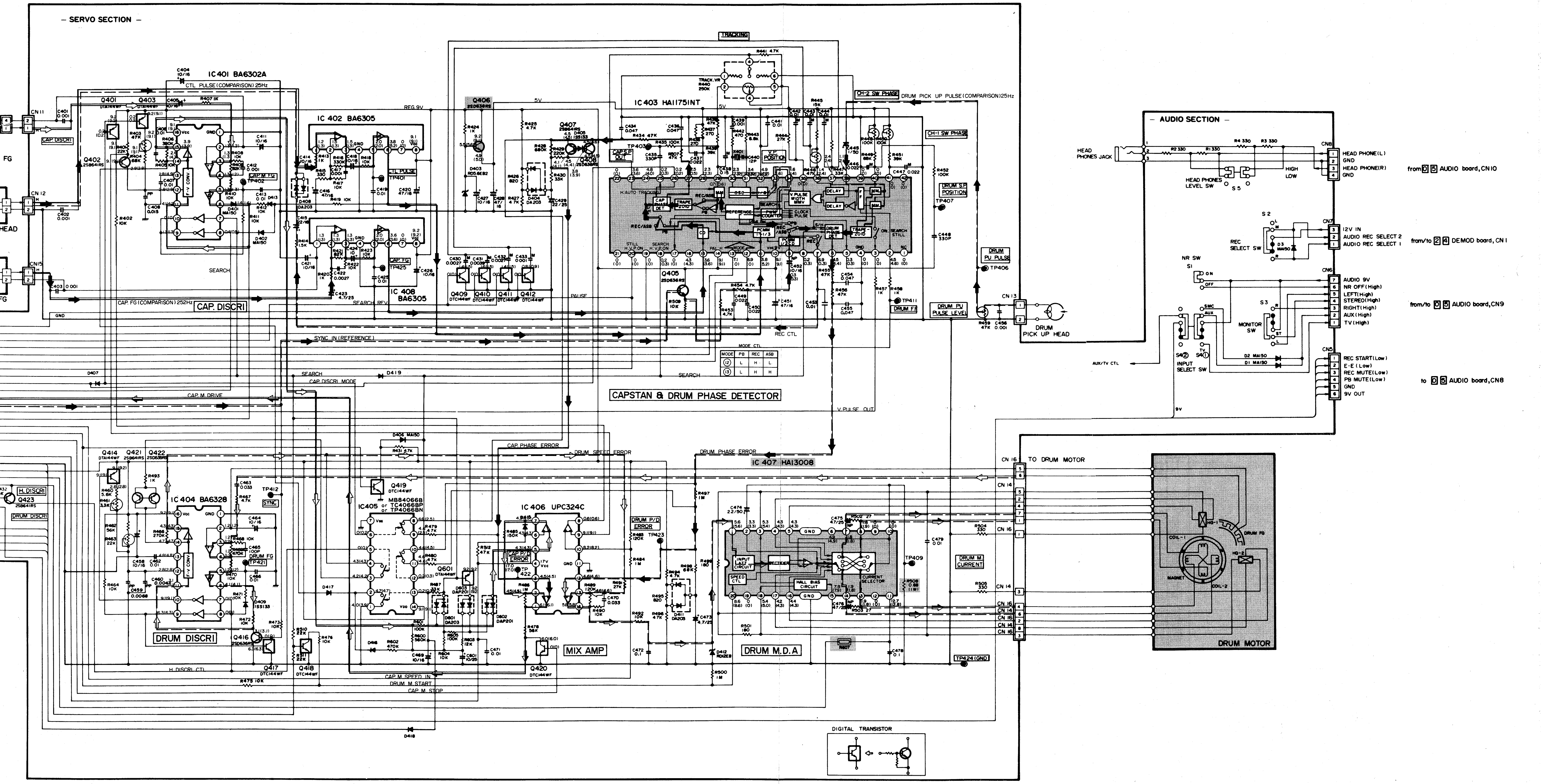
IC202	FF	REW	SEARCH/FF	SEARCH/REW
㊼	H	H	L	L
㊽	H	H	L	L
㊾	L	L	L	L
㊿	L	L	H	H
OUT	2.7V	2.7V	5.4V	5.4V

LOGIC TABLE

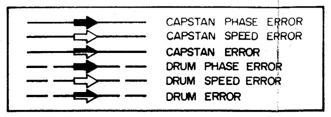
SIGNAL \ MODE	STOP	PLAY	REC	SEARCH FF	SEARCH REV	STILL	REC PAUSE	UNLOADING	ASSEMBLY	BACK SPACE
MODE CTL 2	H	L	H	L	L	L	H	H	H	H
SEARCH	L	L	L	H	H	L	L	L	L	H
CAP. DISCRI MODE	H	L	L	H	H	H	H	H	L	H
CAP. M. STOP	H	L	L	L	L	H	H	H	L	L

NOTES: Unless otherwise specified.

1. All resistance values are in ohms. (1/6 W), (1/8 W).
2. All inductance values are in μH.
3. All capacitance values are in μF.
4. All diodes are 1SS133.


- SERVO SECTION -
IC401 BA6302A
IC 402 BA6305
IC 403 HA11751NT
IC 404 BA6328
IC405 MB84066B or TC4066BP or TP4066BN
IC 406 UPC324C
IC 407 HA13008
IC 408 BA6305
TRACKING
CAP. DISCRI
CAPSTAN & DRUM PHASE DETECTOR
DRUM DISCRI
MIX AMP
DRUM M.D.A
H. DISCRI
DRUM DISCRI
CTL PULSE (COMPARISON) 25Hz
CAP. FG (COMPARISON) 252Hz
DRUM PICK UP PULSE (COMPARISON) 25Hz
CH-2 SW PHASE
CH-1 SW PHASE
DRUM S.P. POSITION
DRUM PU PULSE
DRUM PU PULSE LEVEL
DRUM FF
DRUM P/D ERROR
CAP P/D ERROR
DRUM M. CURRENT
SYNC IN (REFERENCE)
SEARCH
CAP DISCRI MODE
CAP M DRIVE
CAP. PHASE ERROR
DRUM SPEED ERROR
DRUM PHASE ERROR
V. PULSE OUT
REC CTL
H. DISCRI CTL
CAP M SPEED IN
DRUM M START
CAP M STOP
PAUSE
REG 9V
5V
FG
HEAD
CN 11
CN 12
CN15
CN 13
CN 14
CN 16
TO DRUM MOTOR
DRUM PICK UP HEAD
DRUM MOTOR
COIL-1
COIL-2
MAGNET
DRUM FG
HG-1
HG-2
TP424 (GND)
DIGITAL TRANSISTOR
MODE CTL
MODE PB REC ASB
⑫ L H L
⑬ L H H
- AUDIO SECTION -
HEAD PHONES JACK
HEAD PHONE (L)
GND
HEAD PHONE (R)
GND
HEAD PHONES LEVEL SW
HIGH
LOW
S 5
S 2
REC SELECT SW
NR SW S1
ON
OFF
12V IN
AUDIO REC SELECT 2
AUDIO REC SELECT 1
AUDIO 9V
NR OFF (High)
LEFT (High)
STEREO (High)
RIGHT (High)
AUX (High)
TV (High)
S 3
MONITOR SW
INPUT SELECT SW
AUX/TV CTL
REC START (Low)
E-E (Low)
REC MUTE (Low)
PB MUTE (Low)
GND
9V OUT
CN5
CN6
CN7
CN8
from ⓪⑤ AUDIO board, CN10
from/to ②④ DEMOD board, CN1
from/to ⓪⑤ AUDIO board, CN9
to ⓪⑤ AUDIO board, CN8

W), (1/8 W).


CAPSTAN PHASE ERROR
CAPSTAN SPEED ERROR
CAPSTAN ERROR
DRUM PHASE ERROR
DRUM SPEED ERROR
DRUM ERROR

MODES / CONTROL SIGNAL	DRUM SERVO		CAPSTAN SERVO	
	RECORDING	PLAYBACK	RECORDING	PLAYBACK
REFERENCE SIGNAL	V. SYNC	X' TAL	X' TAL	X' TAL
COMPARISON SIGNAL	DRUM PU PULSE	DRUM PU PULSE	CAPSTAN FG	CTL PULSE

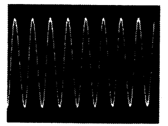
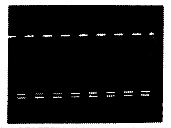
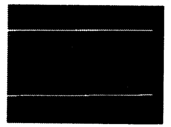
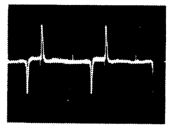
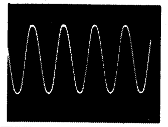
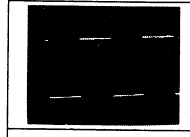
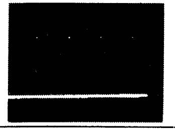
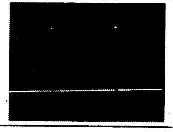
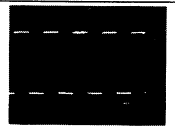
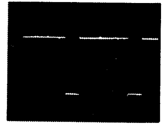
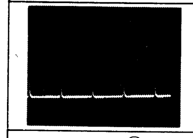
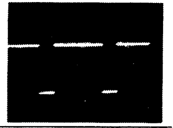
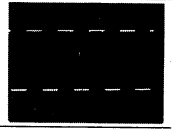
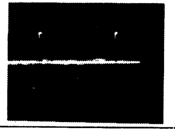
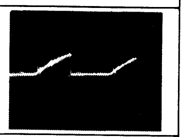
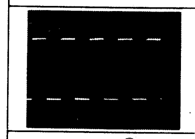
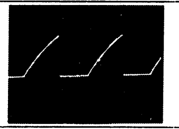
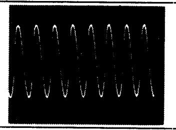
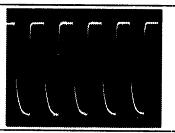
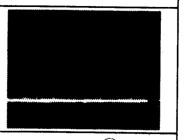
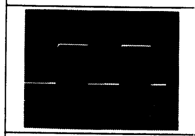
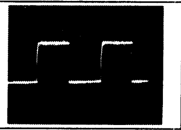
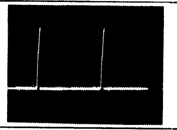
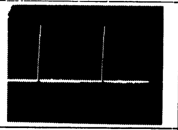
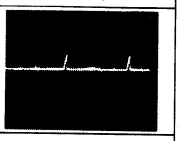
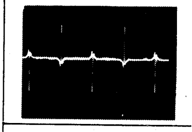
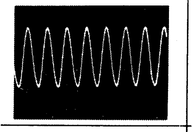
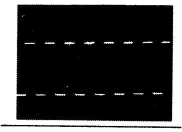
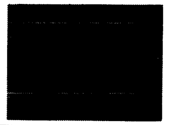
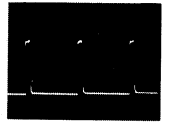
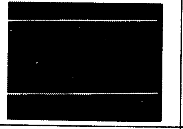
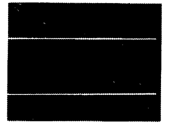
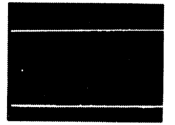
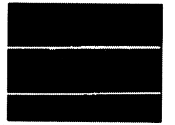
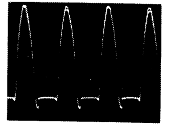
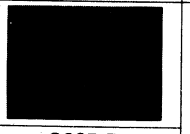
Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen
bei Aufnahme
()bei Wiedergabe

All DC voltages are measured with a digital voltmeter at record mode
() at playback

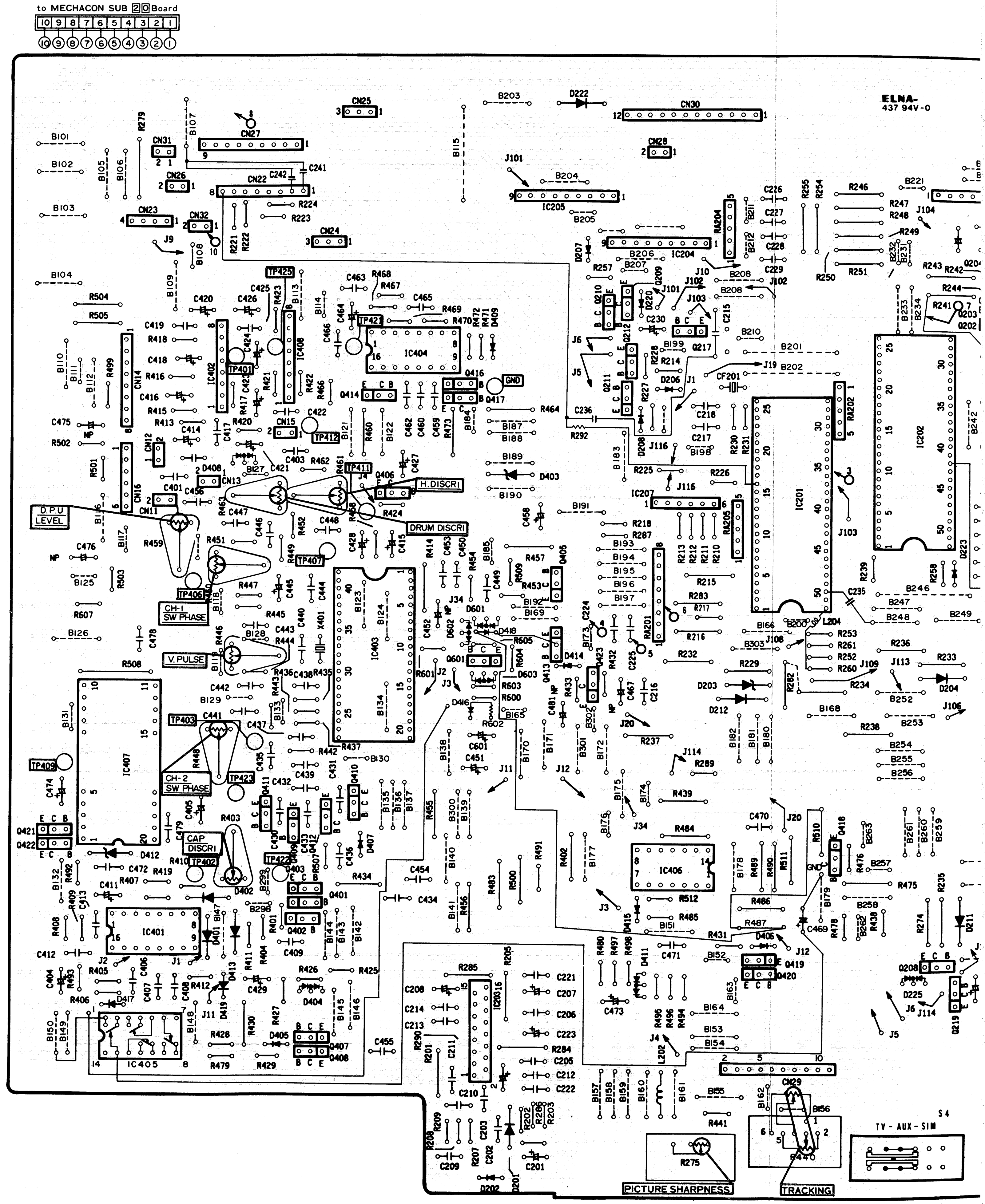
▒ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!
Replace safety components only with original spare parts!

Oszillogramme der Servo-Schaltung · Main waveforms of Servo circuit

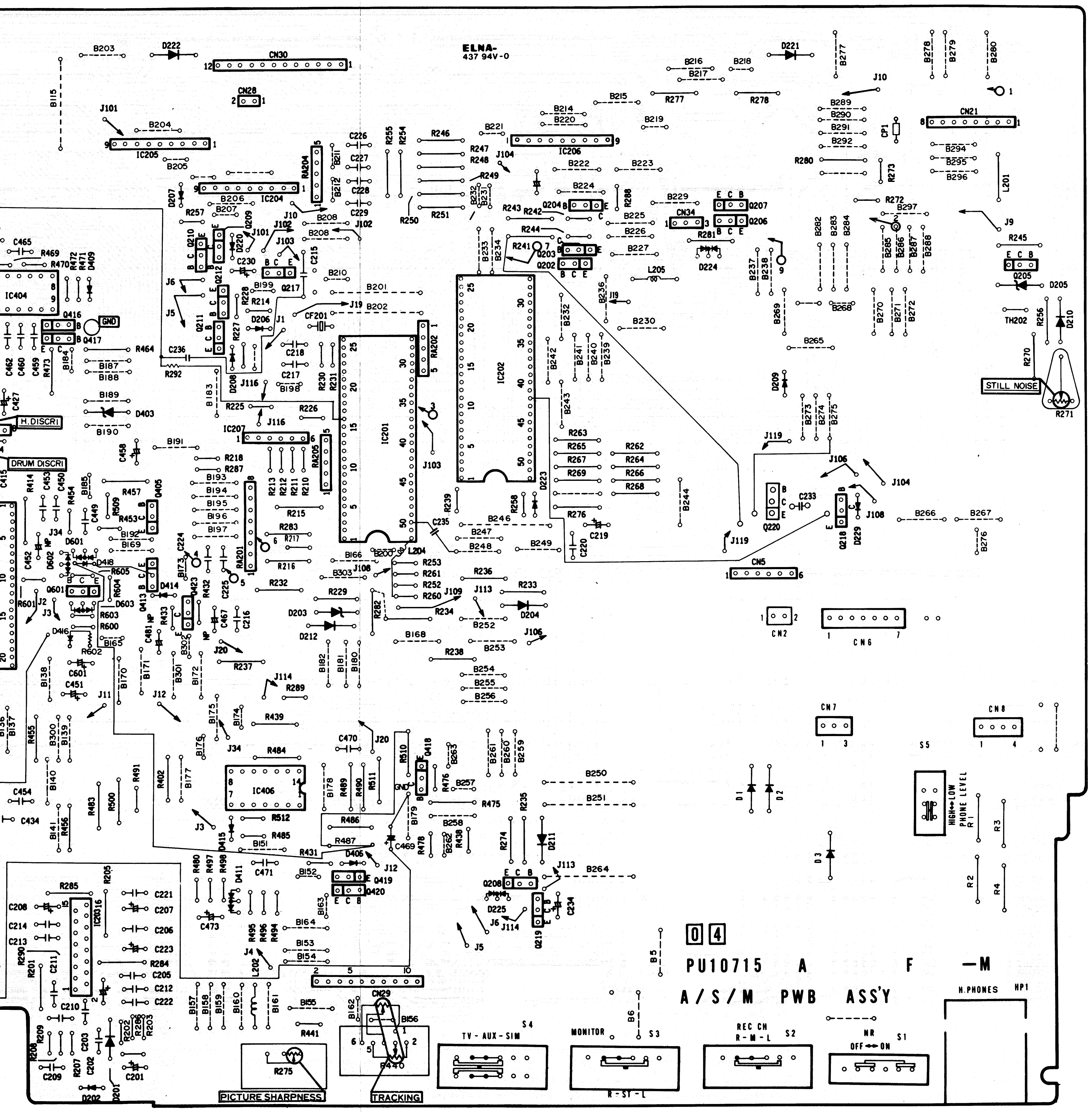
Servo circuit

				
TP402 Cap. M. FG 1.1Vp-p 880Hz	IC401 ⑪ Cap. M. F-V Conv. In 8Vp-p 880Hz	IC401 ⑮ Cap. M. F-V Conv. out 4VDC	TP401 PB CTL pulse 8.5Vp-p 25Hz	TP425 Capstan FG 0.9Vp-p 250Hz
				
TP411 Drum F.F 7Vp-p 25Hz	IC403 ③ V. pulse out 7Vp-p	IC403 ⑤ Drum sampling pulse out 9Vp-p	IC403 ⑥ Drum P/D error 7.5Vp-p	IC403 ⑦ Rec CTL 8Vp-p 25Hz
				
IC403 ⑨ Sync in 0.5Vp-p	IC403 ⑪ CTL pulse in 6Vp-p 25Hz	IC403 ⑬ Cap. FG in 7Vp-p 250Hz	IC403 ㉕ Cap. sampling pulse out 8Vp-p	TP403 Cap. sampling Pulse position
				
IC403 ㉗ Cap. P/D error 7Vp-p	IC403 ㉙ Tracking MMV 2.5Vp-p	IC403 ㉚ Osc in 0.45Vp-p 4.43MHz	IC403 ㉞ 1/8 fsc in 2.8Vp-p 0.55MHz	IC403 ㉟ V. pulse width MM 2.5Vp-p
				
IC403 ㊱ V. pulse MMV (Neg.) 4.5Vp-p	IC403 ㊲ V. pulse MMV (Pos.) 4.5Vp-p	IC403 ㊵ CH-2 sw PHASE MMV 2.5Vp-p	IC403 ㊶ CH-1 sw PHASE MMV 2.5Vp-p	TP407 Drum sampling position
				
TP406 Drum pick up pulse 2Vp-p 25Hz	TP421 Drum FG 1.8Vp-p 1.6kHz	IC404 ⑪ Drum F-V Conv. In 6.2Vp-p 1.6kHz	IC404 ⑮ Drum F-V conv. out 4.5VDC	TP412 Sync 1.7Vp-p
				
TP422 Cap. Error 4.6Vp-p	IC406 ① Cap. M. Drive 0.7VDC	TP423 Drum Error 4.6VDC	IC407 ① Drum MDA in 5.6VDC	IC407 ⑦ ⑧ ⑬ ⑭ Drum MDA out 6.2 Vp-p
				
Q207 E Cap. M. Drive Amp Out 5VDC				

A/S/M-Platte · A/S/M circuit board 0 4 Typ -A-

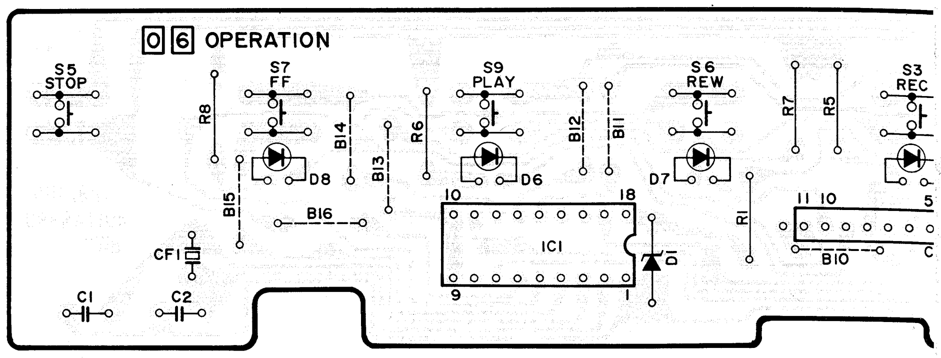

to MECHACON SUB 20 Board
ELNA-
437 94V-0
IC201
IC202
IC204
IC205
IC206
IC207
IC401
IC402
IC403
IC404
IC405
IC406
IC407
IC408
D.P.U LEVEL
H.DISCRI
DRUM DISCRI
CH-1 SW PHASE
V.PULSE
CH-2 SW PHASE
CAP DISCRI
GND
PICTURE SHARPNESS
TRACKING
S4
TV - AUX - SIM

4 Typ -A-


ELNA-
437 94V-0
0 4
PU10715 A F -M
A/S/M PWB ASS'Y
IC201
IC202
IC204
IC205
IC206
IC207
IC404
IC406
CN21
CN28
CN29
CN30
CN34
CN5
CN2
CN6
CN7
CN8
H.DISCRI
DRUM DISCRI
GND
STILL NOISE
R271
PICTURE SHARPNESS
R275
TRACKING
R440
TV - AUX - SIM
S4
MONITOR
S3
R - ST - L
REC CH
R - M - L
S2
NR
OFF ↔ ON
S1
S5
HIGH ↔ LOW
PHONE LEVEL
H.PHONES
HP1

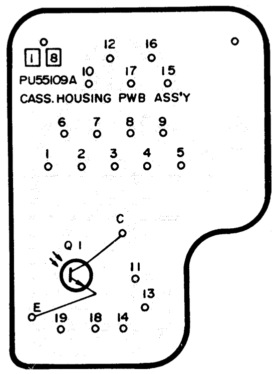
Bedientastenplatte · Operation circuit board 0 6

– OPERATION –

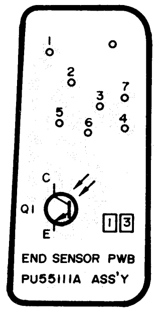

0 6 OPERATION
S5
STOP
S7
FF
S9
PLAY
S6
REW
S3
REC
IC1
CF1
C1
C2
D1
D6
D7
D8
B10
B11
B12
B13
B14
B15
B16
R1
R5
R6
R7
R8

Sensor- und Kopf-Anschlußplatten · Sensor and Hea

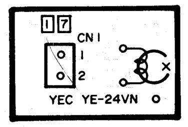
– CASS HOUSING –


1 8
PU55109A
CASS. HOUSING PWB ASS'Y
Q1

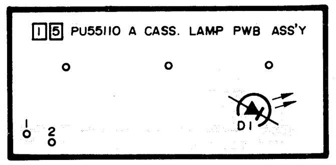
– END SENSOR –


Q1
1 3
END SENSOR PWB
PU55111A ASS'Y

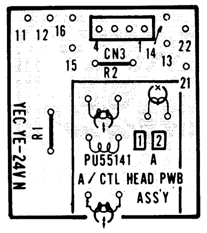
– F.E HEAD –


1 7
CN1
YEC YE-24VN

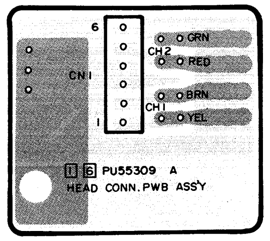
– CASS LAMP –

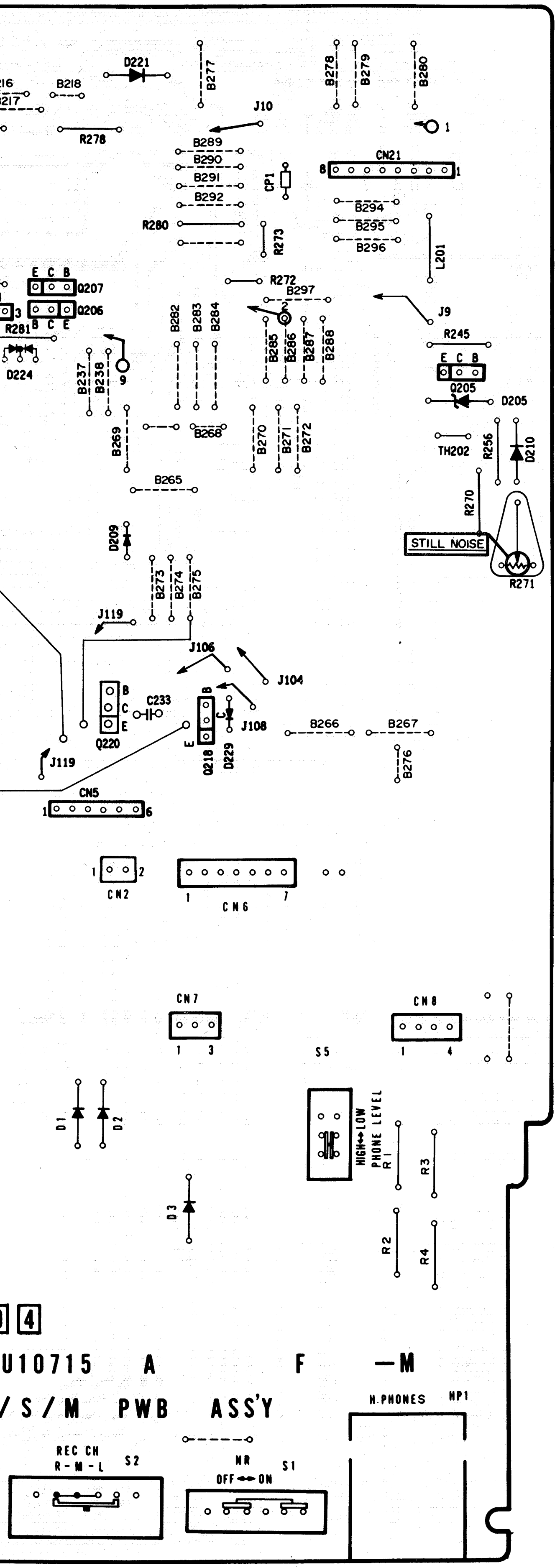

1 5 PU55110 A CASS. LAMP PWB ASS'Y
D1

– A/C HEAD –


CN3
R2
R1
YEC YE-24VN
PU55141 A
0 2
A/CTL HEAD PWB
ASS'Y

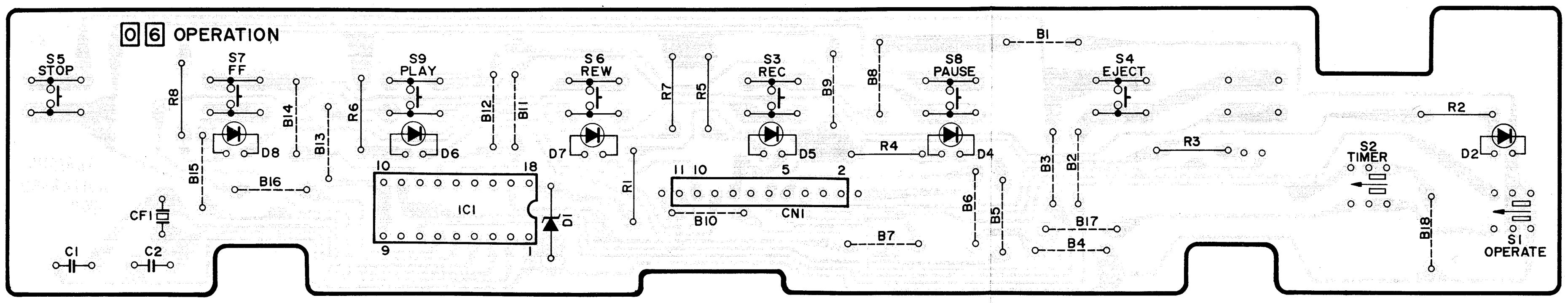
– HEAD CONN. –


CN1
CH2
CH1
GRN
RED
BRN
YEL
1 6 PU55309 A
HEAD CONN. PWB ASS'Y


J10
CN21
J9
R245
D205
TH202
STILL NOISE
R271
J119
J106
J104
J108
Q220
CN5
CN2
CN6
CN7
CN8
S5
HIGH↔LOW PHONE LEVEL
U10715 A F –M
/S/M PWB ASS'Y
H.PHONES
REC CH R-M-L
S2
NR OFF↔ON
S1

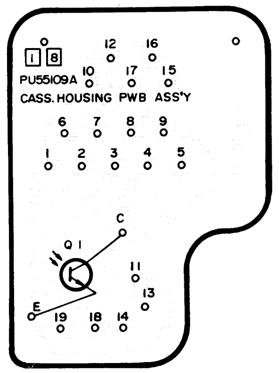
Bedientastenplatte · Operation circuit board 0 6 Typ -A-

– OPERATION –

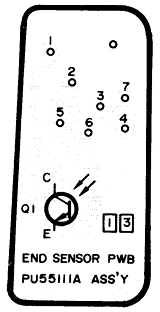

0 6 OPERATION
S5 STOP
S7 FF
S9 PLAY
S6 REW
S3 REC
S8 PAUSE
S4 EJECT
S2 TIMER
S1 OPERATE
IC1
CN1
CF1

Sensor- und Kopf-Anschlußplatten · Sensor and Head Conn. boards

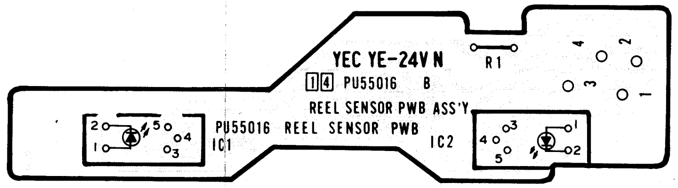
– CASS HOUSING –


1 8
PU55109A
CASS. HOUSING PWB ASS'Y
Q1

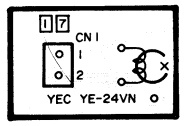
– END SENSOR –


Q1
1 3
END SENSOR PWB
PU55111A ASS'Y

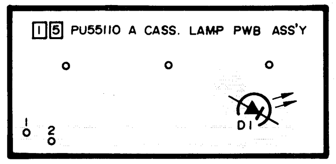
– REEL SENSOR –


YEC YE-24V N
1 4 PU55016 B
REEL SENSOR PWB ASS'Y
PU55016 REEL SENSOR PWB
IC1
IC2
R1

– F.E HEAD –


1 7
CN1
YEC YE-24VN

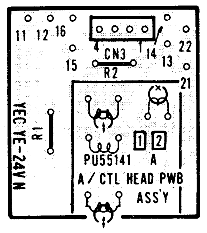
– CASS LAMP –


1 5 PU55110 A CASS. LAMP PWB ASS'Y
D1

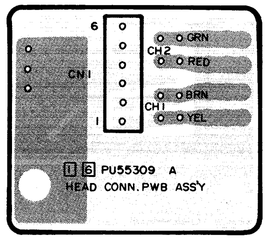
Zusatzplatte Mechacon

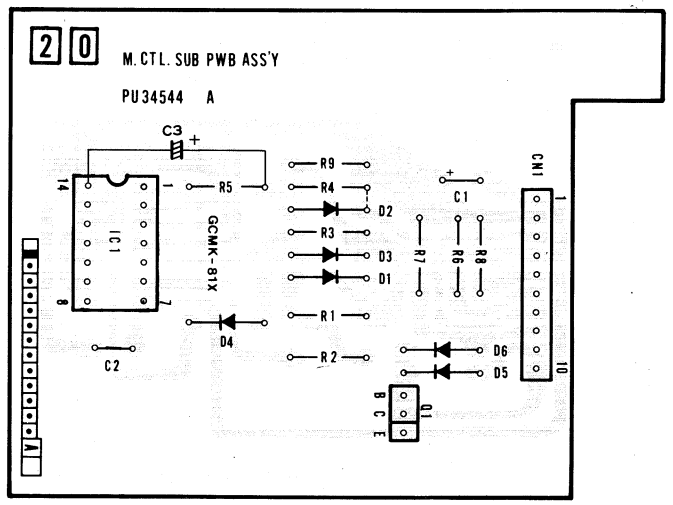
Mechacon Sub board 2 0

– A/C HEAD –


CN3
R2
YEC YE-24VN
PU55141 A
1 2
A/CTL HEAD PWB ASS'Y

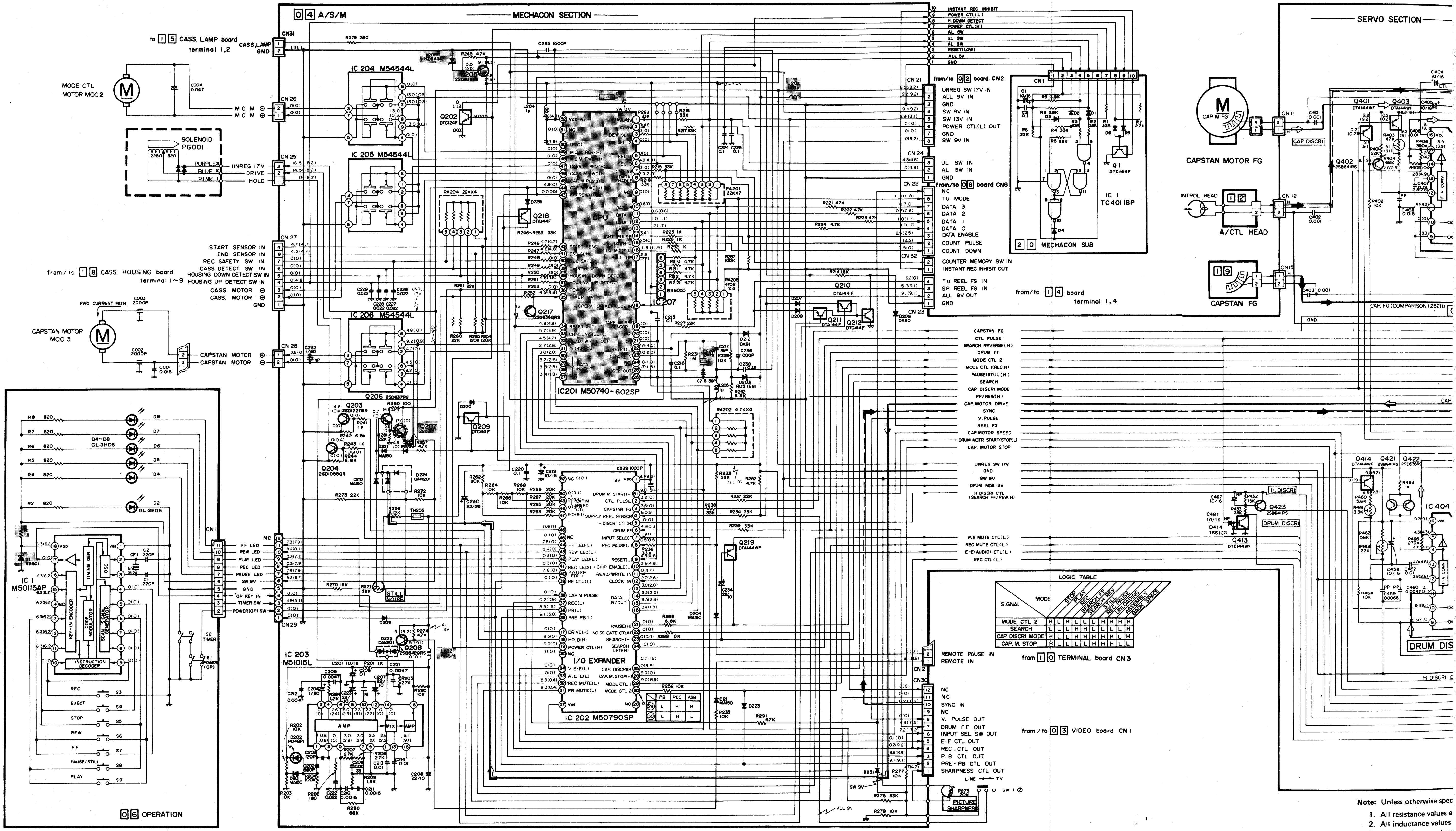
– HEAD CONN. –


CN1
CH2
CH1
GRN
RED
BRN
YEL
1 6 PU55309 A
HEAD CONN. PWB ASS'Y


2 0
M. CTL. SUB PWB ASS'Y
PU34544 A
IC1
GCMK-81X
CN1
C1
C2
C3
Q1

Mechaniksteuer-, Servo-, Audio- und Bedienteil-Schaltungen · Mechacon, Servo, Audio and Operation circuits

Typ -B-, -C-, -D-



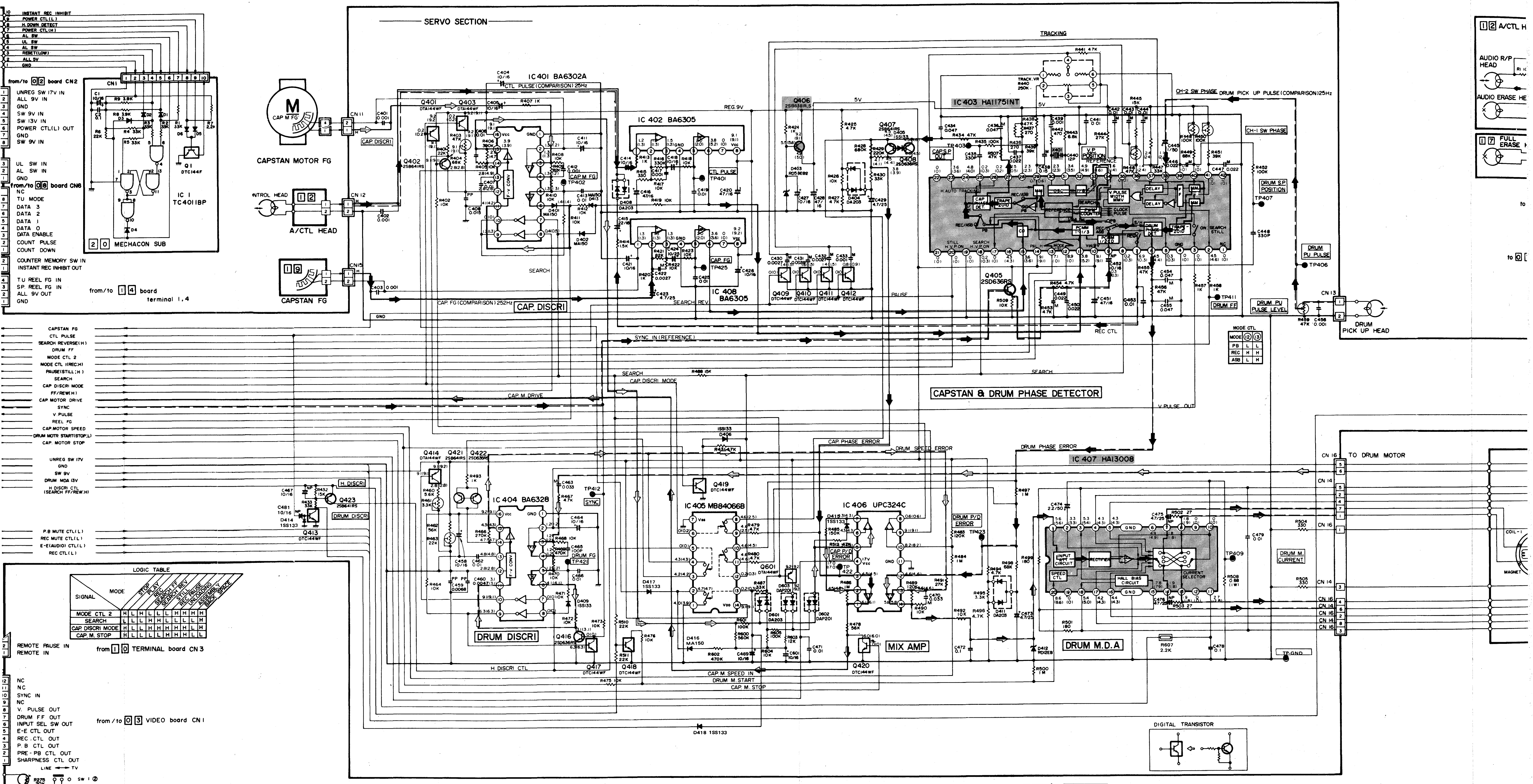
04 A/S/M
MECHACON SECTION
SERVO SECTION
to 15 CASS. LAMP board terminal 1,2
MODE CTL MOTOR M002
SOLENOID PG001
UNREG 17V
DRIVE
HOLD
from/to 18 CASS HOUSING board terminal 1~9
START SENSOR IN
END SENSOR IN
REC SAFETY SW IN
CASS DETECT SW IN
HOUSING DOWN DETECT SW IN
HOUSING UP DETECT SW IN
CASS. MOTOR
CAPSTAN MOTOR M003
FWD CURRENT PATH
IC 204 M54544L
IC 205 M54544L
IC 206 M54544L
IC201 M50740-602SP
CPU
IC 202 M50790SP
I/O EXPANDER
IC 203 M51015L
AMP
MIX
IC 1 M50115AP
KEY-IN ENCODER
CODE MODULATOR
SCAN SIGNAL GENERATOR
TIMING GEN
OSC
INSTRUCTION DECODER
06 OPERATION
REC
EJECT
STOP
REW
FF
PAUSE/STILL
PLAY
S1 POWER (OP)
S2 TIMER
D4~D8 GL-3HD5
D2 GL-3EG5
FF LED
REW LED
PLAY LED
REC LED
PAUSE LED
SW 9V
GND
OP KEY IN
TIMER SW
POWER(OP) SW
STILL NOISE
20 MECHACON SUB
IC 1 TC4011BP
from/to 02 board CN2
from/to 08 board CN6
from/to 14 board terminal 1,4
from/to 03 VIDEO board CN1
from 10 TERMINAL board CN3
REMOTE PAUSE IN
REMOTE IN
PICTURE SHARPNESS
CAPSTAN MOTOR FG
CAP M FG
A/CTL HEAD
CONTROL HEAD
CAPSTAN FG
CAP DISCRI
H DISCRI
DRUM DISCRI
IC 404

LOGIC TABLE

SIGNAL \ MODE	STOP	PLAY	REC	SEARCH FF	SEARCH REV	STILL	REC PAUSE	UNLOADING	ASSEMBLY	BACK SPACE
MODE CTL 2	H	L	H	L	L	L	H	H	H	H
SEARCH	L	L	L	H	H	L	L	L	L	H
CAP. DISCRI MODE	H	L	L	H	H	H	H	H	L	H
CAP. M. STOP	H	L	L	L	L	H	H	H	L	L

Note: Unless otherwise specified
1. All diodes are 1SS133

Note: Unless otherwise spec
1. All resistance values a
2. All inductance values
3. All capacitance values


SERVO SECTION
IC401 BA6302A
IC 402 BA6305
IC403 HA11751NT
IC 404 BA6328
IC 405 MB84066B
IC 406 UPC324C
IC 407 HA13008
IC 408 BA6305
CAPSTAN MOTOR FG
CAPSTAN FG
A/CTL HEAD
CAP. DISCRI
DRUM DISCRI
MIX AMP
DRUM M.D.A
CAPSTAN & DRUM PHASE DETECTOR
DRUM PICK UP HEAD
TO DRUM MOTOR
TRACKING
CTL PULSE (COMPARISON) 25Hz
CAP. FG (COMPARISON) 252Hz
DRUM PICK UP PULSE (COMPARISON) 25Hz
SYNC IN (REFERENCE)
CAP. M. DRIVE
CAP. PHASE ERROR
DRUM SPEED ERROR
DRUM PHASE ERROR
CAP. M. SPEED IN
DRUM M. START
CAP. M. STOP
H. DISCRI CTL
SEARCH
REC CTL
V. PULSE OUT
MODE CTL
MODE ⑫ ⑬
PB L L
REC H H
ASB L H
from/to 0 2 board CN2
from/to 0 8 board CN6
from/to 1 4 board terminal 1, 4
from 1 0 TERMINAL board CN3
from/to 0 3 VIDEO board CN1
2 0 MECHACON SUB
IC1 TC4011BP
1 2 A/CTL H
AUDIO R/P HEAD
AUDIO ERASE HE
1 7 FULL ERASE
DIGITAL TRANSISTOR
PICTURE SHARPNESS
P.B MUTE CTL(L)
REC MUTE CTL(L)
E-E(AUDIO) CTL(L)
REC CTL(L)
REMOTE PAUSE IN
REMOTE IN

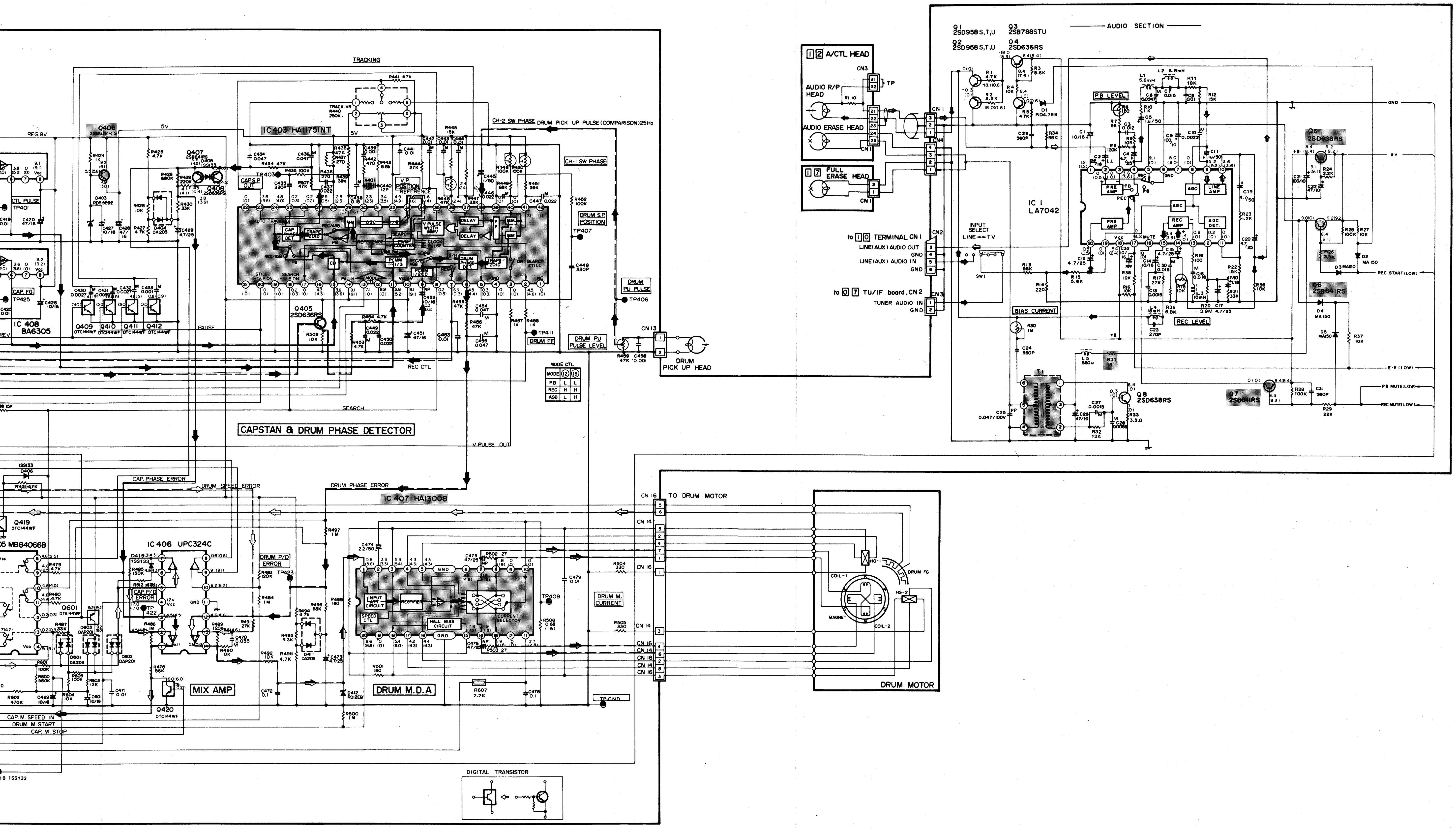
LOGIC TABLE

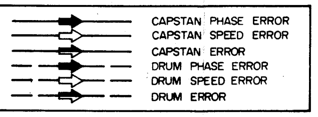
SIGNAL \ MODE	STOP	PLAY	REC	SEARCH FF	SEARCH REV	STILL	REC PAUSE	UNLOADING	ASSEMBLY	BACK SPACE
MODE CTL 2	H	L	H	L	L	L	H	H	H	H
SEARCH	L	L	L	H	H	L	L	L	L	H
CAP. DISCRI MODE	H	L	L	H	H	H	H	H	L	H
CAP. M. STOP	H	L	L	L	L	H	H	H	L	L

Note: Unless otherwise specified
1. All resistance values are in ohms (1/ W)
2. All inductance values are in µH
3. All capacitance values are in µF

——➡——	CAPSTAN PHASE ERROR
——⇨——	CAPSTAN SPEED ERROR
——➜——	CAPSTAN ERROR
– –➡– –	DRUM PHASE ERROR
– –⇨– –	DRUM SPEED ERROR
– –➜– –	DRUM ERROR

CONTROL SIGNAL \ MODES	DRUM SERVO		CAPSTAN SERVO	
	RECORDING	PLAYBACK	RECORDING	PLAYBACK
REFERENCE SIGNAL	V. SYNC	X' TAL	X' TAL	X' TAL
COMPARISON SIGNAL	DRUM PU PULSE	DRUM PU PULSE	CAPSTAN FG	CTL PULSE


TRACKING
IC 403 HA11751NT
CAPSTAN & DRUM PHASE DETECTOR
IC 408 BA6305
Q406 2SB638R,S
Q407 2SB641RS
Q408 2SD636RS
Q405 2SD636RS
Q409 Q410 Q411 Q412 DTC144WF
CH-2 SW PHASE DRUM PICK UP PULSE (COMPARISON) 25Hz
CH-1 SW PHASE
DRUM S.P. POSITION
DRUM PU PULSE
DRUM PU PULSE LEVEL
DRUM FF
CAPS.P OUT
MODE CTL
DRUM PICK UP HEAD
REC CTL
SEARCH
PAUSE
V. PULSE OUT
CAP. PHASE ERROR
DRUM SPEED ERROR
DRUM PHASE ERROR
IC 407 HA13008
IC 406 UPC324C
MB84066B
Q419 DTC144WF
Q420 DTC144WF
Q601 DTA144WF
DRUM P/D ERROR
CAP P/D ERROR
MIX AMP
DRUM M.D.A
DRUM M. CURRENT
TO DRUM MOTOR
DRUM MOTOR
DRUM FG
COIL-1
COIL-2
MAGNET
HG-1
HG-2
CAP. M. SPEED IN
DRUM M. START
CAP. M. STOP
TP-GND
DIGITAL TRANSISTOR
AUDIO SECTION
Q1 2SD958S,T,U
Q2 2SD958S,T,U
Q3 2SB788STU
Q4 2SD636RS
Q5 2SD638RS
Q6 2SB641RS
Q7 2SB641RS
Q8 2SD638RS
IC 1 LA7042
12 A/CTL HEAD
AUDIO R/P HEAD
AUDIO ERASE HEAD
17 FULL ERASE HEAD
PB LEVEL
REC LEVEL
BIAS CURRENT
INPUT SELECT LINE ⟷ TV
to 10 TERMINAL CN1
LINE(AUX) AUDIO OUT
LINE(AUX) AUDIO IN
to 07 TU/IF board, CN2
TUNER AUDIO IN
GND
9V
REC START (LOW)
E-E (LOW)
PB MUTE (LOW)
REC MUTE (LOW)


CAPSTAN PHASE ERROR
CAPSTAN SPEED ERROR
CAPSTAN ERROR
DRUM PHASE ERROR
DRUM SPEED ERROR
DRUM ERROR

CONTROL SIGNAL \ MODES	DRUM SERVO		CAPSTAN SERVO	
	RECORDING	PLAYBACK	RECORDING	PLAYBACK
REFERENCE SIGNAL	V. SYNC	X' TAL	X' TAL	X' TAL
COMPARISON SIGNAL	DRUM PU PULSE	DRUM PU PULSE	CAPSTAN FG	CTL PULSE

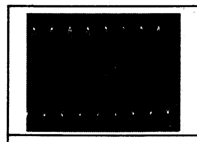
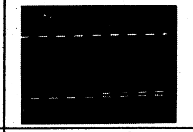
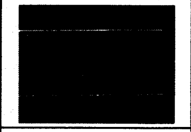
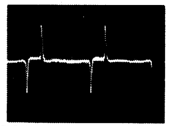
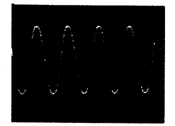
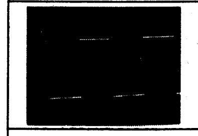
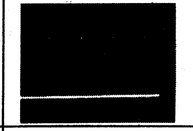
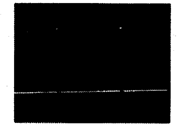
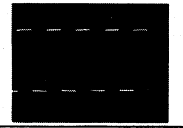
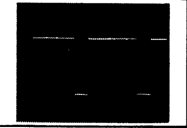
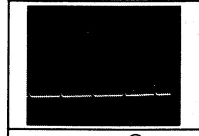
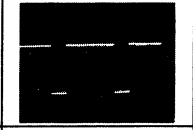
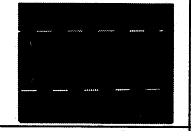
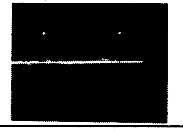
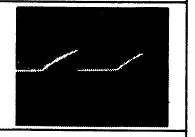
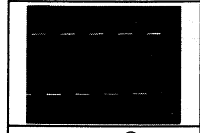
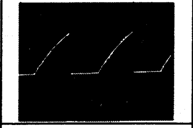
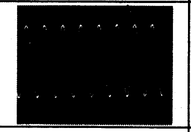
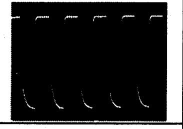
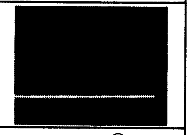
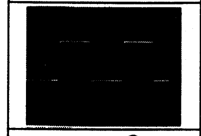
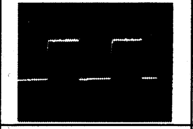
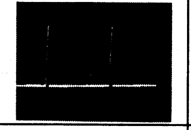
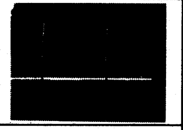
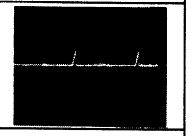
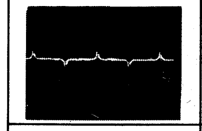
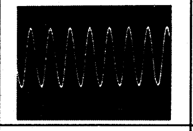
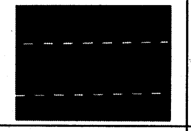
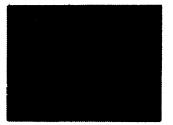
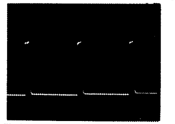
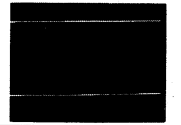
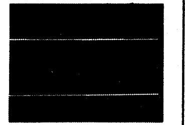
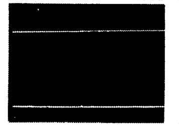
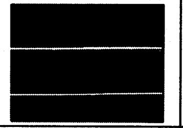
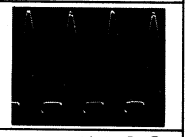
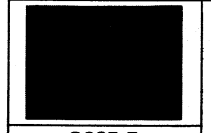
Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen
bei Aufnahme
() bei Wiedergabe

All DC voltages are measured with a digital voltmeter at record mode
() at playback

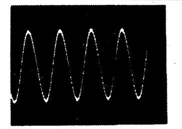
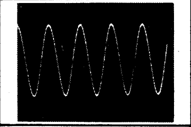
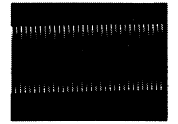
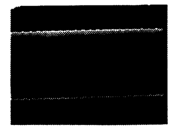
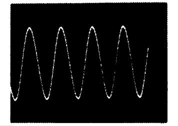
▨ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!
Replace safety components only with original spare parts!

Oszillogramme der Servo- und Audio-Schaltung
Main waveforms of Servo and Audio circuits

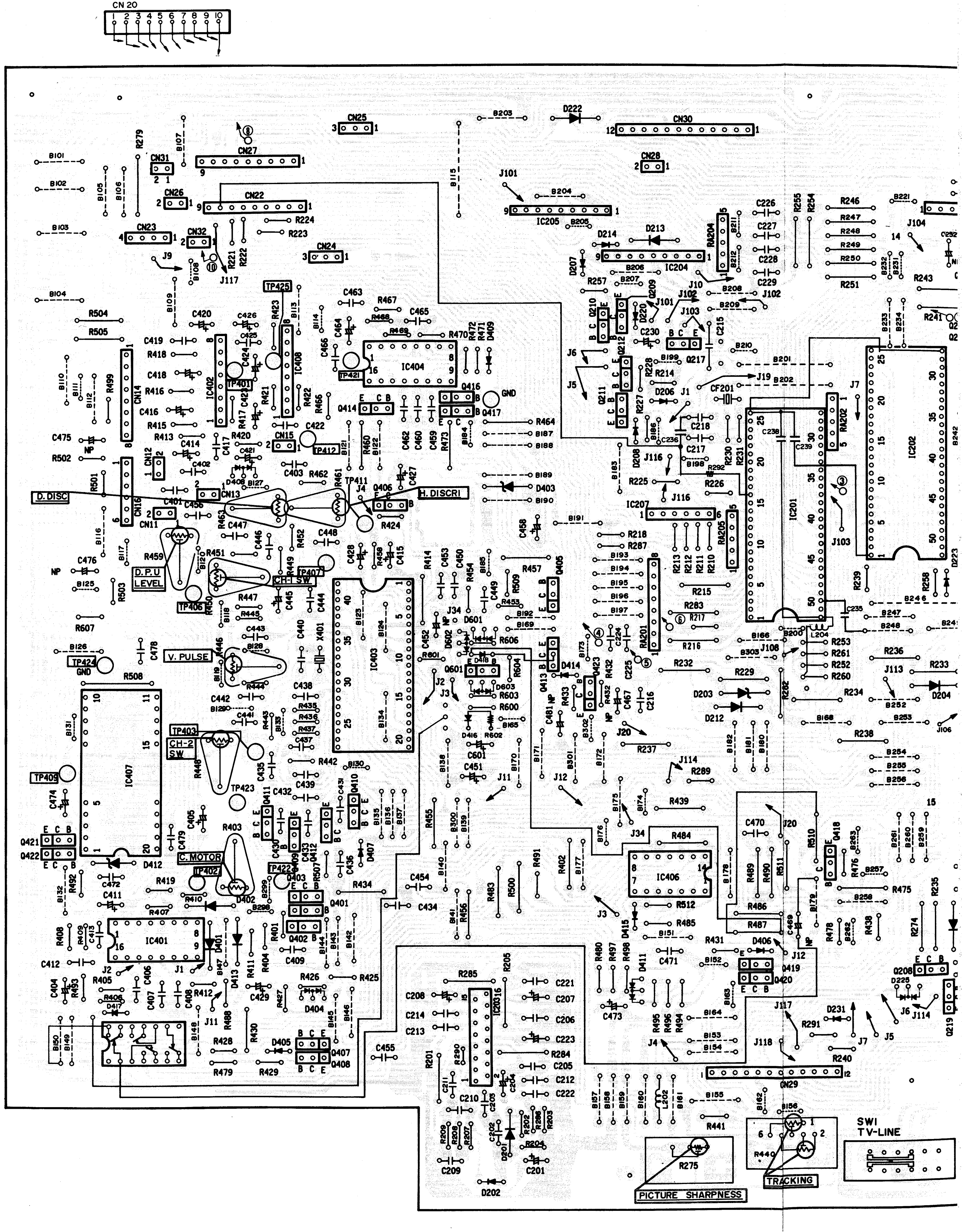
Servo circuit

 TP402 Cap. M. FG 1.1Vp-p 880Hz	 IC401 ⑪ Cap. M. F-V Conv. In 8Vp-p 880Hz	 IC401 ⑮ Cap. M. F-V Conv. out 4VDC	 TP401 PB CTL pulse 8.5Vp-p 25Hz	 TP425 Capstan FG 0.9Vp-p 250Hz
 TP411 Drum F.F 7Vp-p 25Hz	 IC403 ③ V. pulse out 7Vp-p	 IC403 ⑤ Drum sampling pulse out 9Vp-p	 IC403 ⑥ Drum P/D error 7.5Vp-p	 IC403 ⑦ Rec CTL 8Vp-p 25Hz
 IC403 ⑨ Sync in 0.5Vp-p	 IC403 ⑪ CTL pulse in 6Vp-p 25Hz	 IC403 ⑮ Cap. FG in 7Vp-p 250Hz	 IC403 ㉕ Cap. sampling pulse out 8Vp-p	 TP403 Cap. sampling Pulse position
 IC403 ㉗ Cap. P/D error 7Vp-p	 IC403 ㉙ Tracking MMV 2.5Vp-p	 IC403 ㉚ Osc in 0.45Vp-p 4.43MHz	 IC403 ㉞ 1/8 fsc in 2.8Vp-p 0.55MHz	 IC403 ㉟ V. pulse width MM 2.5Vp-p
 IC403 ㊱ V. pulse MMV (Neg.) 4.5Vp-p	 IC403 ㊲ V. pulse MMV (Pos.) 4.5Vp-p	 IC403 ㊵ CH-2 sw PHASE MMV 2.5Vp-p	 IC403 ㊶ CH-1 sw PHASE MMV 2.5Vp-p	 TP407 Drum sampling position
 TP406 Drum pick up pulse 2Vp-p 25Hz	 TP421 Drum FG 1.8Vp-p 1.6kHz	 IC404 ⑪ Drum F-V Conv. In 6.2Vp-p 1.6kHz	 IC404 ⑮ Drum F-V conv. out 4.5VDC	 TP412 Sync 1.7Vp-p
 TP422 Cap. Error 4.6Vp-p	 IC406 ① Cap. M. Drive 0.7VDC	 TP423 Drum Error 4.6VDC	 IC407 ① Drum MDA in 5.6VDC	 IC407 ⑦ ⑧ ⑬ ⑭ Drum MDA out 6.2 Vp-p
 Q207 E Cap. M. Drive Amp Out 5VDC				

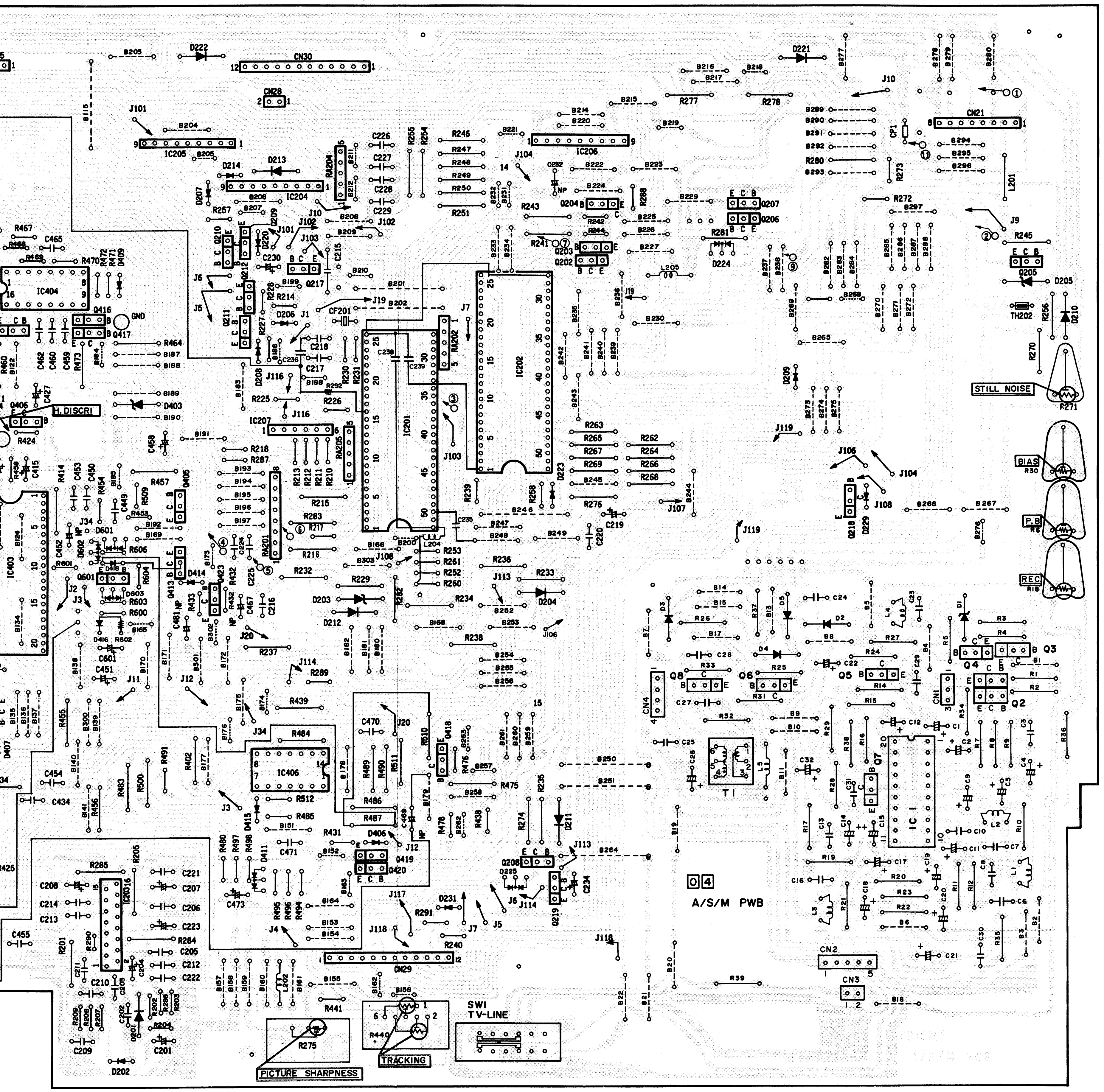
Audio circuit

 CN2 ⑤ Audio in 1kHz -20dB (220mVp-p)
 IC1 ⑩ Line Amp out 1kHz 0dB (2.2Vp-p)
 T1 ⑤⑥ Bias Osc 68kHz 200Vp-p
 CN1 ① REC Audio 9Vp-p
 CN2 ③ Audio out 1kHz 0dB (2.2Vp-p)

A/S/M-Platte · A/S/M circuit board 0 4 Typ -B-, -C-, -D-

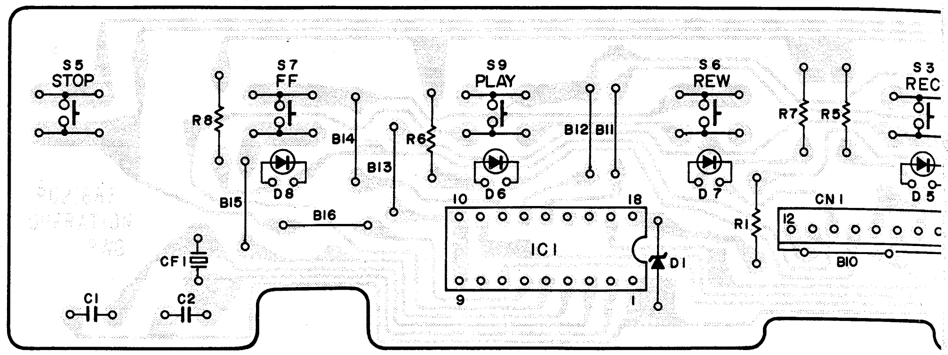

CN20
CN25
CN30
CN27
CN22
CN23
CN24
CN26
CN28
CN31
CN32
IC205
IC204
IC404
IC402
IC403
IC401
IC406
IC407
IC201
IC202
IC207
TP425
TP421
TP401
TP412
TP406
TP424 GND
TP403
TP409
TP402
TP422
TP407
TP423
D.DISC
H.DISCRI
D.P.U LEVEL
CH-1 SW
CH-2 SW
V. PULSE
C.MOTOR
GND
PICTURE SHARPNESS
TRACKING
SWI TV-LINE

rd 04 Typ -B-, -C-, -D-


04
A/S/M PWB
PICTURE SHARPNESS
TRACKING
SWI
TV-LINE
STILL NOISE
BIAS
P.B
REC
H. DISCRI
CN30
CN21
CN29
IC201
IC202
IC204
IC205
IC206
IC207
IC404
IC406
IC403
IC1
T1

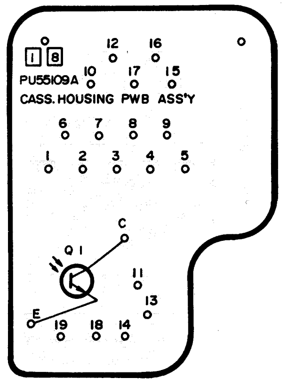
Bedientastenplatte · Operation circuit board 06

– OPERATION –

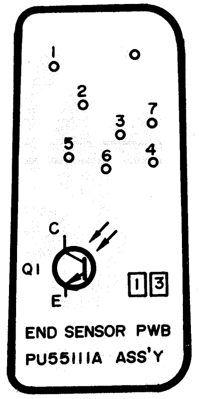

S5
STOP
S7
FF
S9
PLAY
S6
REW
S3
REC
IC1
CN1

Sensor- und Kopf-Anschlußplatten · Sensor and Head

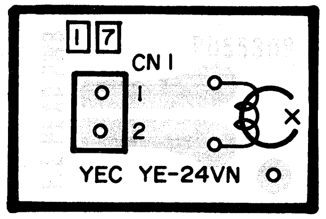
– CASS HOUSING –


18
PU55109A
CASS. HOUSING PWB ASS'Y
Q1

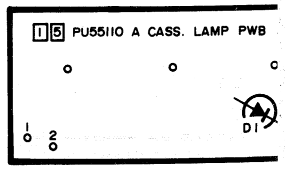
– END SENSOR –


13
Q1
END SENSOR PWB
PU55111A ASS'Y

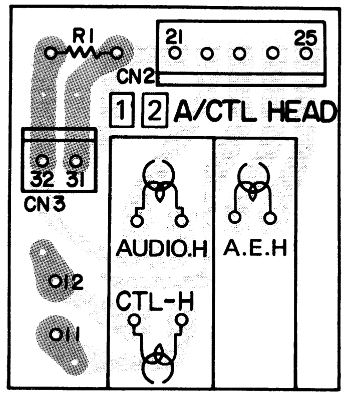
– F.E HEAD –


17
CN1
YEC YE-24VN

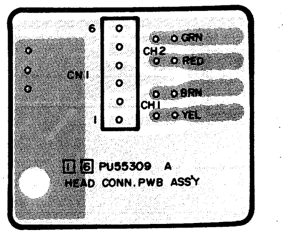
– CASS LAMP –

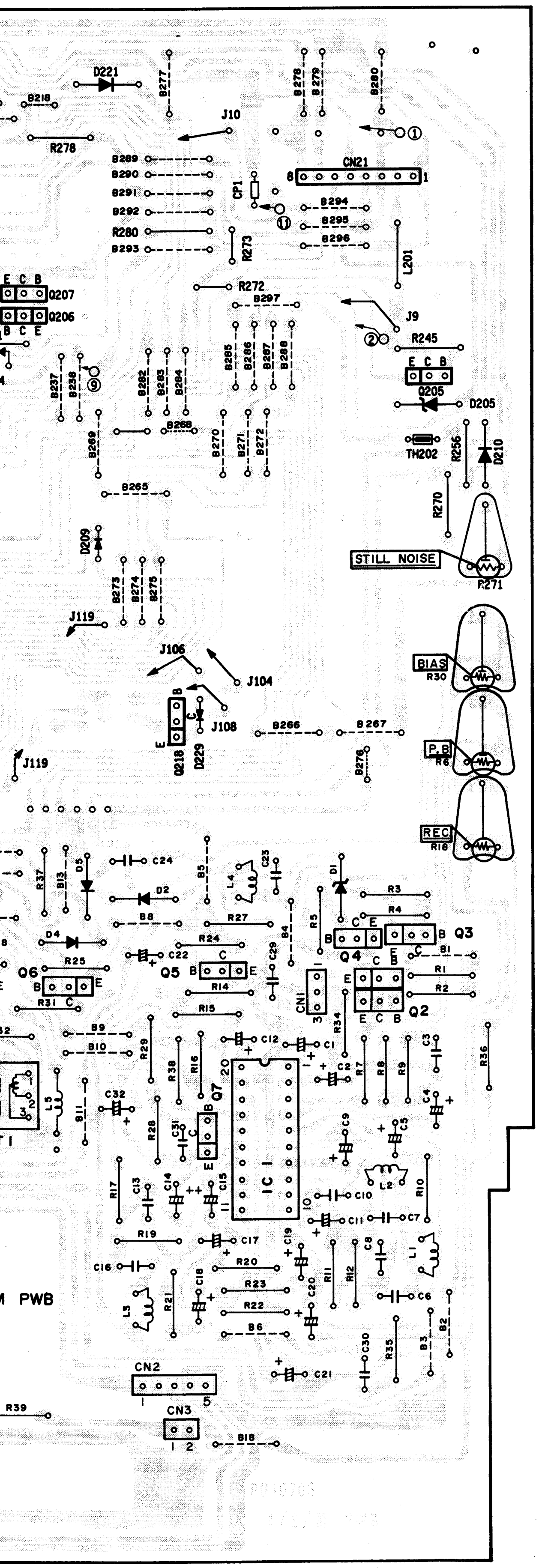

15 PU55110 A CASS. LAMP PWB
D1

– A/C HEAD –


R1
CN2
12 A/CTL HEAD
CN3
AUDIO.H
A.E.H
CTL-H

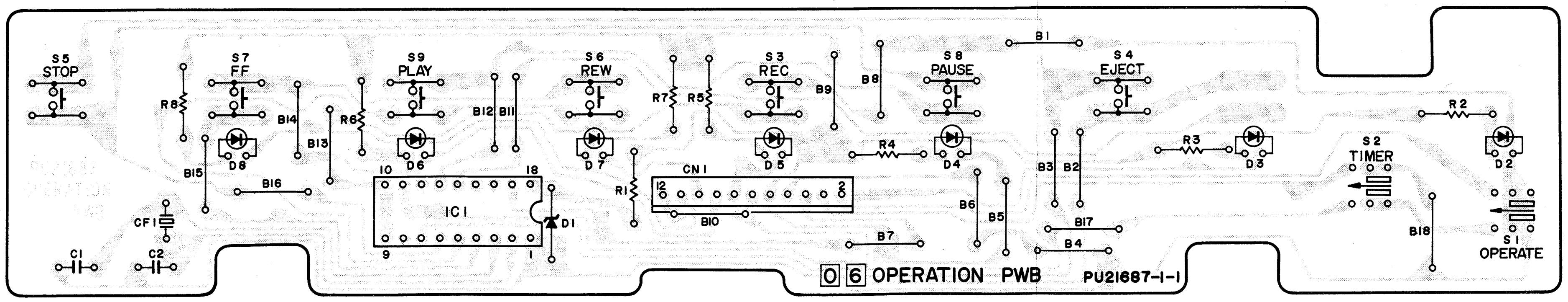
– HEAD CONN. –


CN1
CH2
CH1
GRN
RED
BRN
YEL
16 PU55309 A
HEAD CONN. PWB ASS'Y


D221
R277
R278
J10
CN21
CP1
R273
L201
R272
R297
J9
R245
Q207
Q206
Q205
D205
TH202
R256
D210
R270
STILL NOISE
R271
J119
J106
J104
BIAS
R30
P.B
R6
REC
R18
J108
R266
R267
Q218
D229
Q3
Q4
Q5
Q6
Q2
Q7
IC I
CN2
CN3
R39
PWB

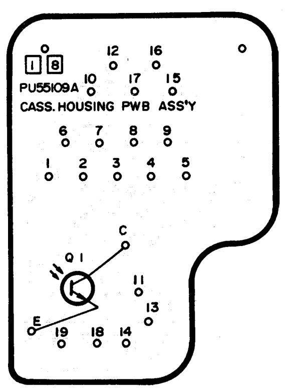
Bedientastenplatte · Operation circuit board 0 6 Typ -B-, -C-, -D-

– OPERATION –

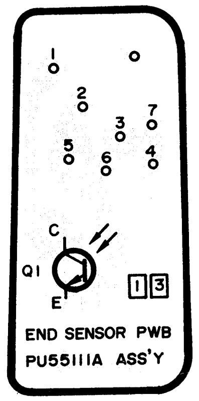

S5 STOP
S7 FF
S9 PLAY
S6 REW
S3 REC
S8 PAUSE
S4 EJECT
S2 TIMER
S1 OPERATE
D8
D6
D7
D5
D4
D3
D2
D1
IC I
CN I
CF1
C1
C2
R1
R2
R3
R4
R5
R6
R7
R8
B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
0 6 OPERATION PWB
PU21687-1-1

Sensor- und Kopf-Anschlußplatten · Sensor and Head Conn. boards

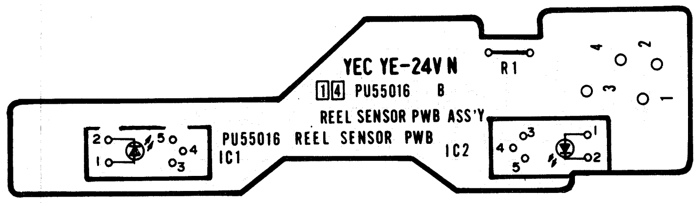
– CASS HOUSING –


1 8
PU55109A
CASS. HOUSING PWB ASS'Y
Q1
C
E

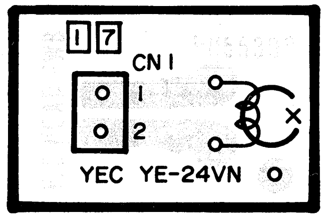
– END SENSOR –


Q1
C
E
1 3
END SENSOR PWB
PU55111A ASS'Y

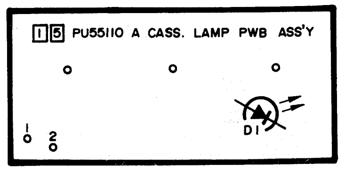
– REEL SENSOR –


YEC YE-24V N
1 4 PU55016 B
REEL SENSOR PWB ASS'Y
R1
PU55016 REEL SENSOR PWB
IC1
IC2

– F.E HEAD –


1 7
CN I
1
2
YEC YE-24VN

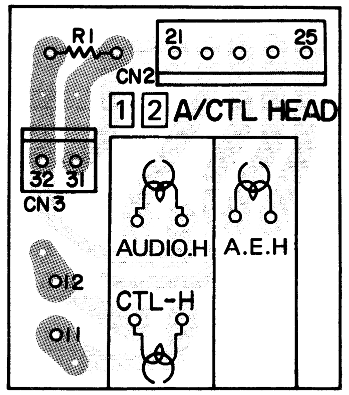
– CASS LAMP –


1 5 PU55110 A CASS. LAMP PWB ASS'Y
D1
1
2

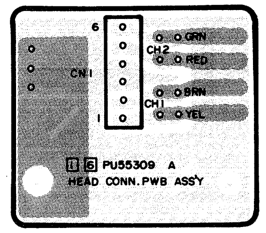
Zusatzplatte Mechacon

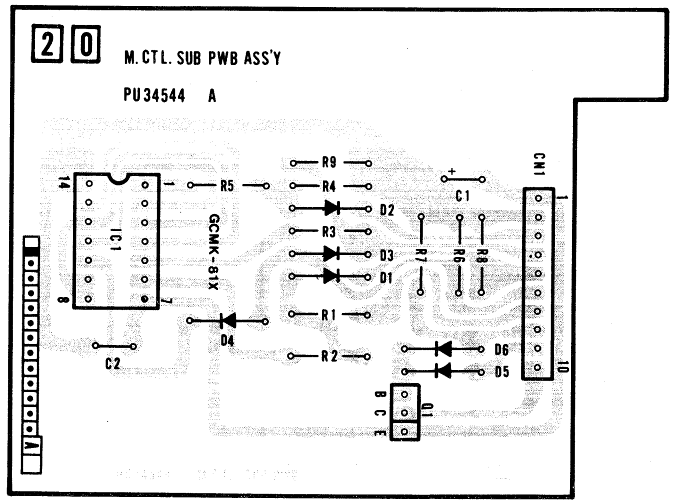
Mechacon Sub board 2 0

– A/C HEAD –

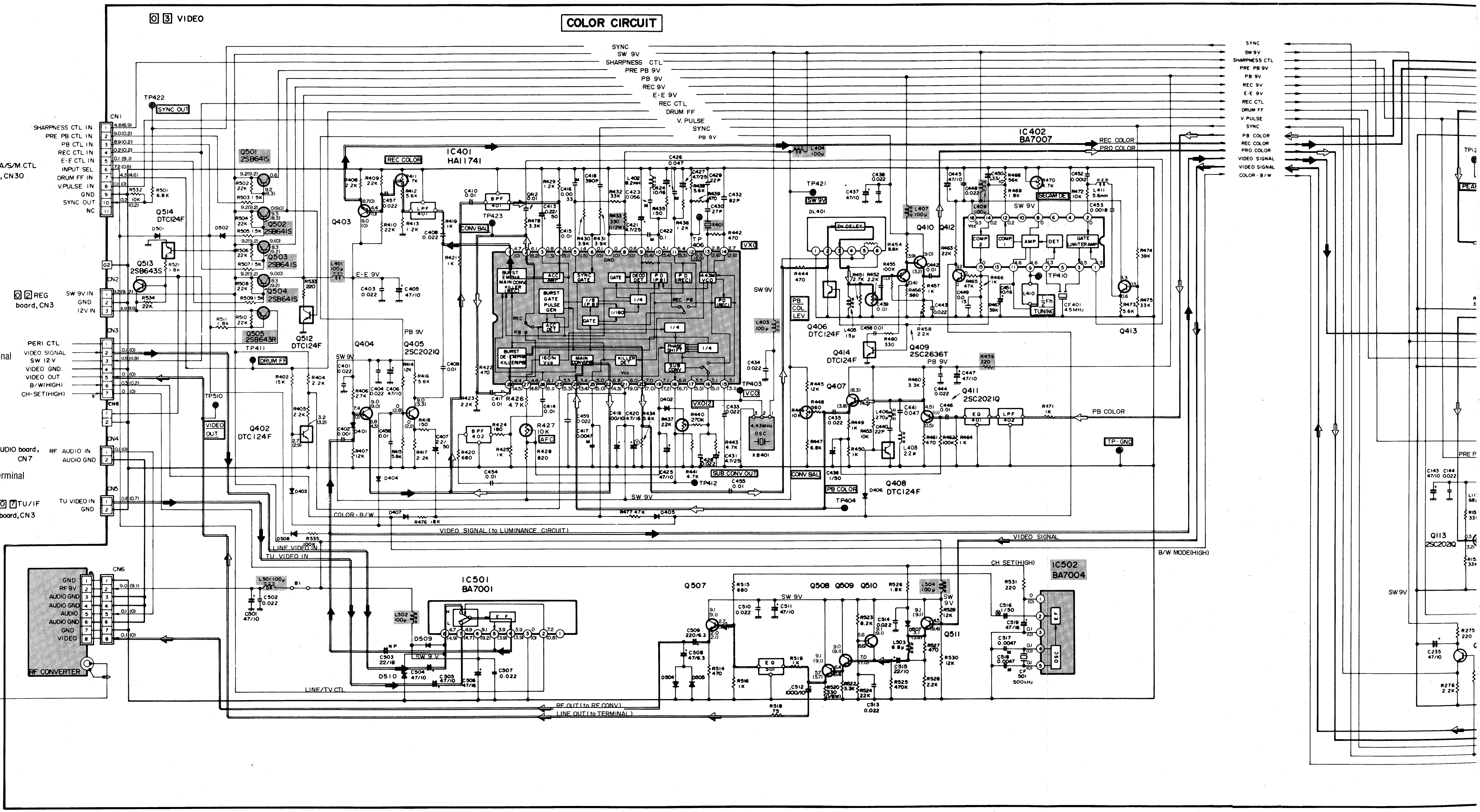

R1
CN2
21
25
1 2 A/CTL HEAD
32 31
CN3
AUDIO.H
A.E.H
CTL-H
12
11

– HEAD CONN. –

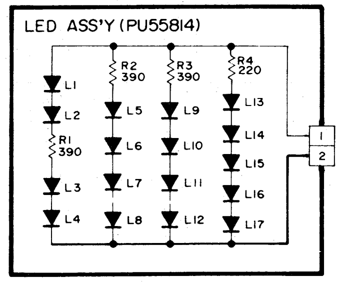

CN1
CH2
CH1
GRN
RED
BRN
YEL
1 6 PU55309 A
HEAD CONN. PWB ASS'Y


2 0
M. CTL. SUB PWB ASS'Y
PU34544 A
IC1
GCMK-81X
R1
R2
R3
R4
R5
R6
R7
R8
R9
C1
C2
D1
D2
D3
D4
D5
D6
Q1
CN1

Video-Schaltungen · Video circuits

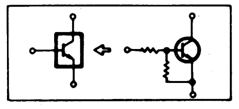

03 VIDEO
COLOR CIRCUIT
SYNC
SW 9V
SHARPNESS CTL
PRE PB 9V
PB 9V
REC 9V
E-E 9V
REC CTL
DRUM FF
V. PULSE
TP422
SYNC OUT
CN1
SHARPNESS CTL IN
PRE PB CTL IN
PB CTL IN
REC CTL IN
E-E CTL IN
INPUT SEL
DRUM FF IN
V.PULSE IN
GND
SYNC OUT
NC
from 04 A/S/M.CTL board, CN30
02 REG board, CN3
SW 9V IN
GND
12V IN
from 10 Terminal CN 2
PERI CTL
VIDEO SIGNAL
SW 12V
VIDEO GND
VIDEO OUT
B/W(HIGH)
CH-SET(HIGH)
from 05 AUDIO board, CN7
or 10 Terminal
RF AUDIO IN
AUDIO GND
from 07 TU/IF board, CN3
TU VIDEO IN
GND
Q501 2SB641S
Q502 2SB641S
Q503 2SB641S
Q504 2SB641S
Q505 2SB643R
Q512 DTC124F
Q513 2SB643S
Q514 DTC124F
TP411
DRUM FF
IC401 HA11741
REC COLOR
Q403
Q404
Q405 2SC2021Q
Q402 DTC124F
TP510
VIDEO OUT
CONV BAL
TP423
BPF 401
LPF 401
BPF 402
AFC
ACC AMP
SYNC GATE
GATE
DECO DET
P D (P.B)
P D (REC)
4.43M VCO
BURST EMPHA
MAIN CONV
KILLER
BURST GATE PULSE GEN
ACC DET
1/8
1/4
1/160
PHASE SHIFT
BURST DE-EMPHA
160fH VCO
MAIN CONV
KILLER DET
SUB CONV
TP403
VCO
VXO(2)
VXO
4.43MHz OSC
X8401
SUB CONV OUT
TP412
SW 9V
COLOR-B/W
VIDEO SIGNAL (to LUMINANCE CIRCUIT)
LINE VIDEO IN
TU VIDEO IN
IC402 BA7007
REC COLOR
PRO COLOR
TP421
SW 9V
DL401
2H DELAY
PB COL LEV
Q406 DTC124F
Q414 DTC124F
Q409 2SC2636T
Q410
Q412
Q413
Q407
Q411 2SC2021Q
Q408 DTC124F
SECAM DET
COMP 2
COMP 1
AMP
DET
GATE LIMITER AMP
TP410
TUNING
CF401 4.5MHz
EQ 401
LPF 402
PB COLOR
TP GND
PB COLOR
TP404
VIDEO SIGNAL
CH SET(HIGH)
B/W MODE(HIGH)
CN6
GND
RF 9V
AUDIO GND
AUDIO GND
AUDIO
AUDIO GND
GND
VIDEO
RF CONVERTER
to 10 RF TERMINAL
RF OUT
IC501 BA7001
E F
SW 9V
D509
D510
LINE/TV CTL
RF OUT (to RF CONV)
LINE OUT (to TERMINAL)
Q507
Q508 Q509 Q510
Q511
EQ 501
IC502 BA7004
EF
OSC
CF 501 500kHz
SYNC
SW 9V
SHARPNESS CTL
PRE PB 9V
PB 9V
REC 9V
E-E 9V
REC CTL
DRUM FF
V.PULSE
SYNC
PB COLOR
REC COLOR
PRO COLOR
VIDEO SIGNAL
VIDEO SIGNAL
COLOR · B/W
Q113 2SC2021Q
PRE P
SW 9V

LED ASS'Y (PU55814)


R2 390
R3 390
R4 220
R1 390
L1
L2
L3
L4
L5
L6
L7
L8
L9
L10
L11
L12
L13
L14
L15
L16
L17
1
2

to 03 VIDEO board CN8
SW 12V
GND

DIGITAL TRANSISTOR



➡ RECORDING SIGNAL PATH

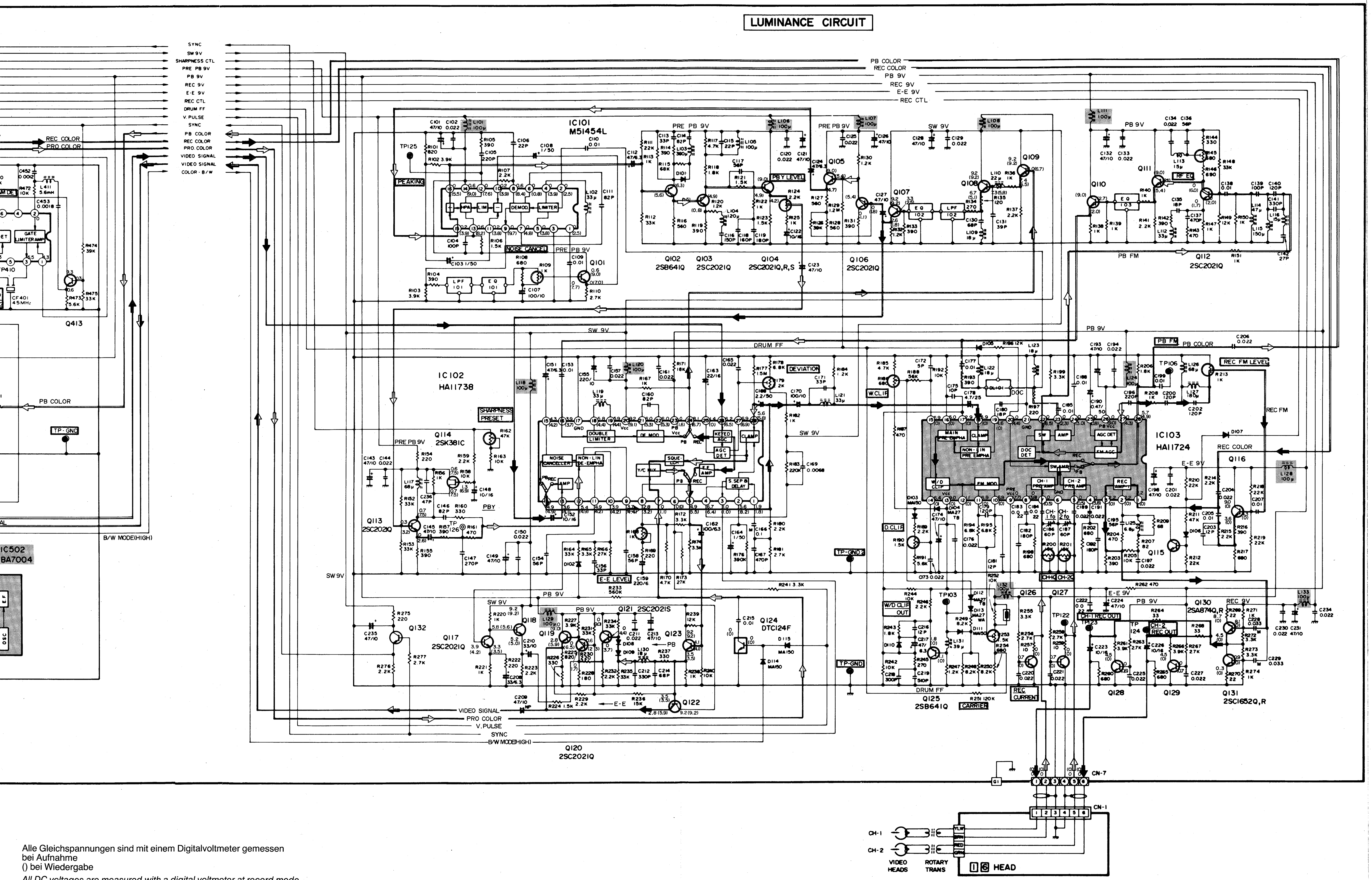
⇨ PLAYBACK SIGNAL PATH

⇛ REC PLAY SIGNAL PATH

Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen
bei Aufnahme
() bei Wiedergabe

All DC voltages are measured with a digital voltmeter at record mode
() at playback

▨ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!
Replace safety components only with original spare parts!

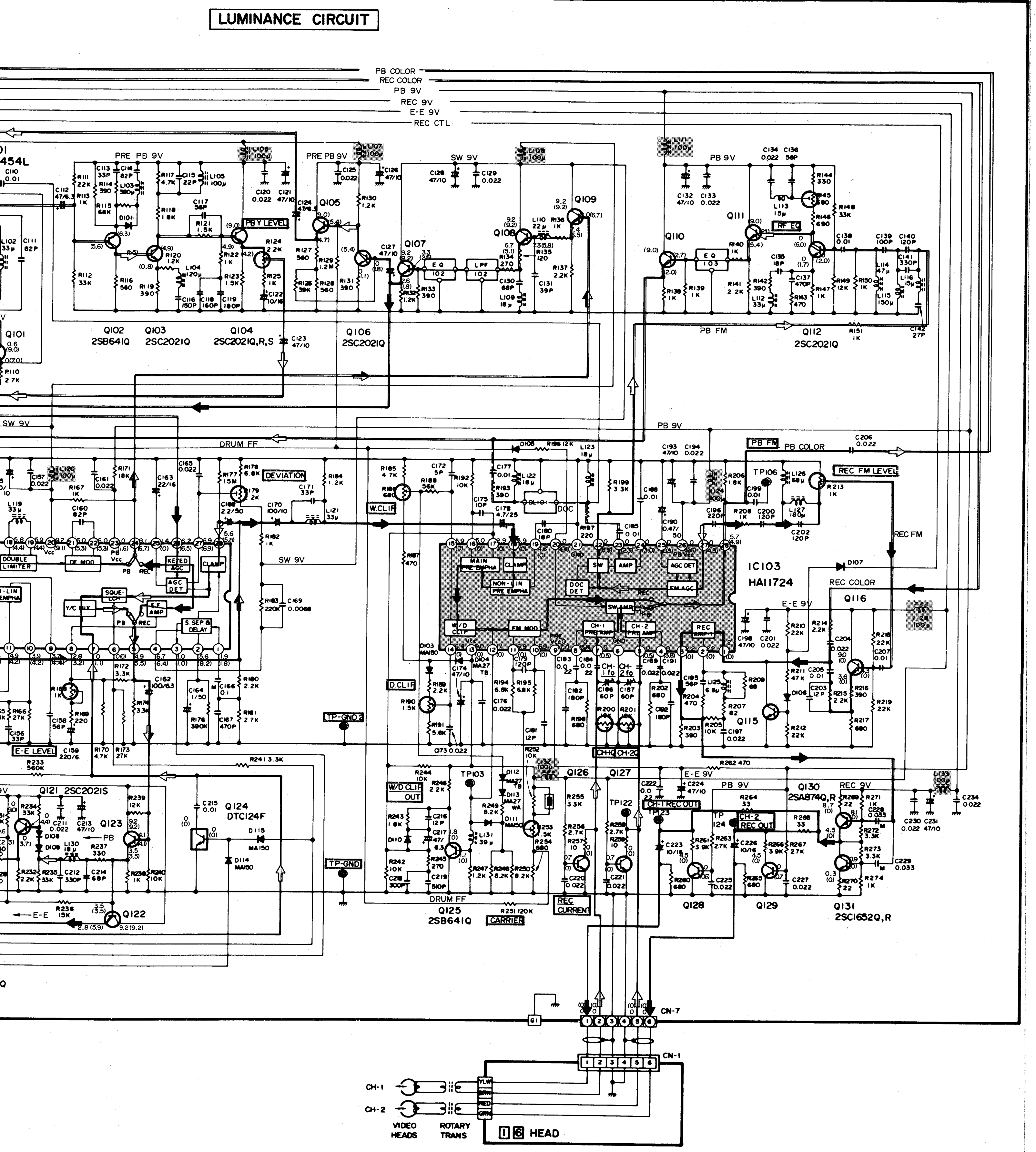

LUMINANCE CIRCUIT
SYNC
SW 9V
SHARPNESS CTL
PRE PB 9V
PB 9V
REC 9V
E-E 9V
REC CTL
DRUM FF
V. PULSE
PB COLOR
REC COLOR
PRO COLOR
VIDEO SIGNAL
COLOR · B/W
IC101
M51454L
PEAKING
NOISE CANCEL
DEMOD
LIMITER
Q101
Q102
2SB641Q
Q103
2SC2021Q
Q104
2SC2021Q,R,S
Q105
Q106
2SC2021Q
Q107
Q108
Q109
Q110
Q111
Q112
2SC2021Q
PB Y LEVEL
RF EQ
PB FM
IC102
HA11738
SHARPNESS PRESET
Q114
2SK381C
Q113
2SC2021Q
DOUBLE LIMITER
NOISE CANCELLER
NON-LIN DE-EMPHA
Y/C MIX
SQUELCH
KEYED AGC
CLAMP
5 SEP & DELAY
DEVIATION
E-E LEVEL
PBY
W.CLIP
D.CLIP
IC103
HA11724
MAIN PRE EMPHA
NON-LIN PRE EMPHA
DOC DET
FM MOD
W/D CLIP
CH-1 PRE AMP
CH-2 PRE AMP
REC AMP
AGC DET
SW AMP
REC FM LEVEL
REC FM
Q115
Q116
TP106
TP-GND
TP-GND 2
TP103
TP122
TP123
W/D CLIP OUT
CH-1 REC OUT
CH-2 REC OUT
REC CURRENT
CARRIER
Q117
2SC2021Q
Q118
Q119
Q120
2SC2021Q
Q121 2SC2021S
Q122
Q123
Q124
DTC124F
Q125
2SB641Q
Q126
Q127
Q128
Q129
Q130
2SA874Q,R
Q131
2SC1652Q,R
Q132
Q413
IC502
BA7004
B/W MODE(HIGH)
CN-7
CN-1
CH-1
CH-2
VIDEO HEADS
ROTARY TRANS
YLW
BRN
RED
GRN
HEAD

Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen
bei Aufnahme
() bei Wiedergabe

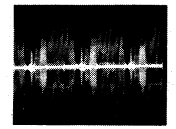
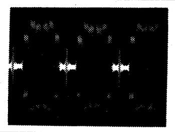
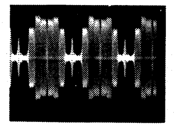
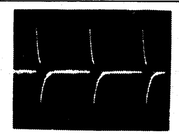
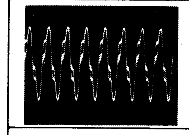
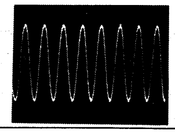
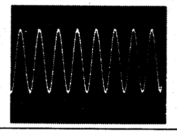
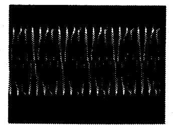
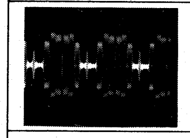
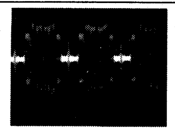
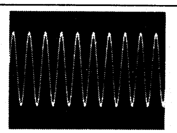
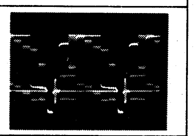
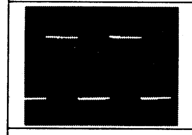
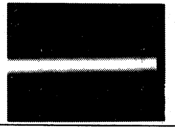
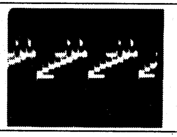
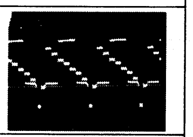
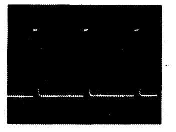
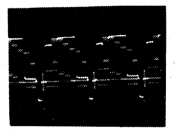
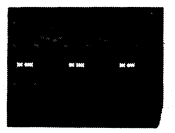
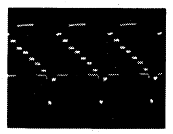
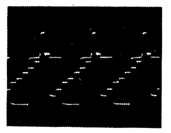
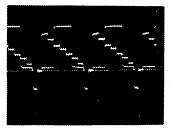
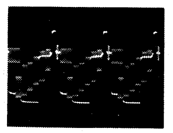
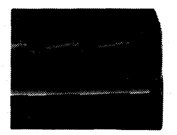
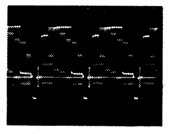
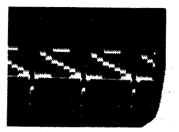
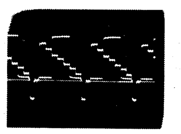
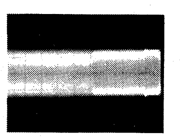
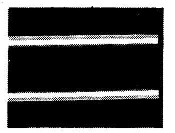
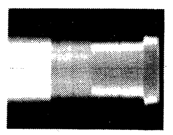
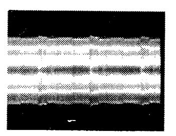
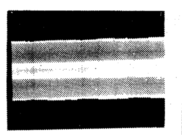
All DC voltages are measured with a digital voltmeter at record mode
() at playback

▨ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

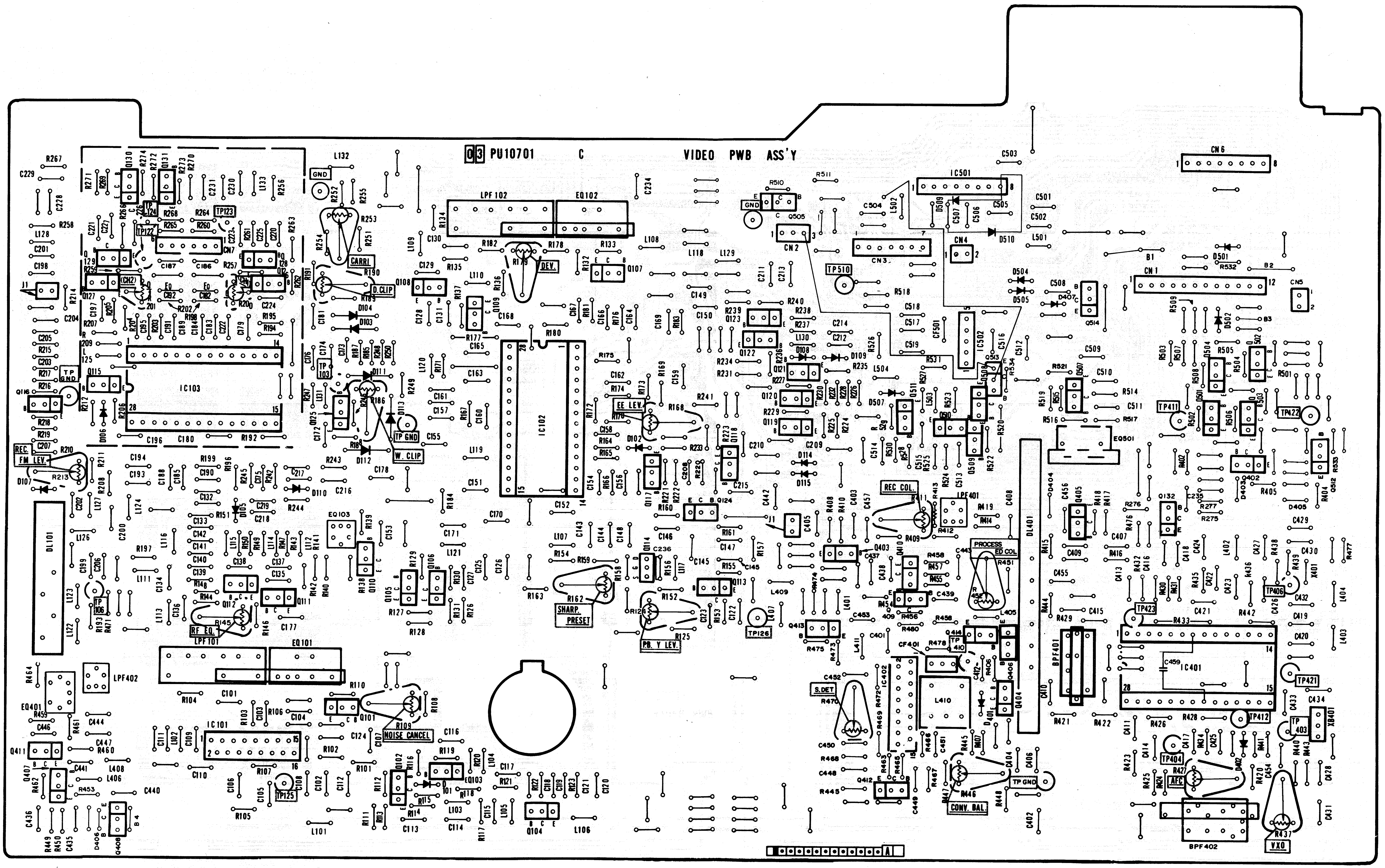
Replace safety components only with original spare parts!

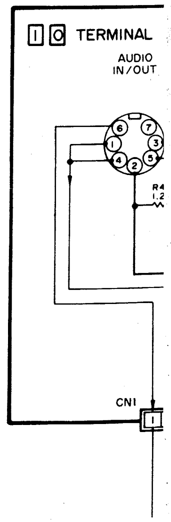

LUMINANCE CIRCUIT
PB COLOR
REC COLOR
PB 9V
REC 9V
E-E 9V
REC CTL
PRE PB 9V
SW 9V
PB FM
DRUM FF
PB COLOR
REC FM LEVEL
REC FM
REC COLOR
Q101
Q102 2SB641Q
Q103 2SC2021Q
Q104 2SC2021Q,R,S
Q105
Q106 2SC2021Q
Q107
Q108
Q109
Q110
Q111
Q112 2SC2021Q
IC103 HA11724
Q115
Q116
Q121 2SC2021S
Q122
Q123
Q124 DTC124F
Q125 2SB641Q
Q126
Q127
Q128
Q129
Q130 2SA874Q,R
Q131 2SC1652Q,R
PB Y LEVEL
RF EQ
DEVIATION
W.CLIP
D.CLIP
W/D CLIP OUT
E-E LEVEL
TP-GND
TP-GND 2
TP103
TP106
TP122
TP123
CH-1 REC OUT
CH-2 REC OUT
REC CURRENT
CARRIER
CN-7
CN-1
CH-1
CH-2
VIDEO HEADS
ROTARY TRANS
HEAD

Oszillogramme der Video-Schaltung · Main waveforms of Video circuit

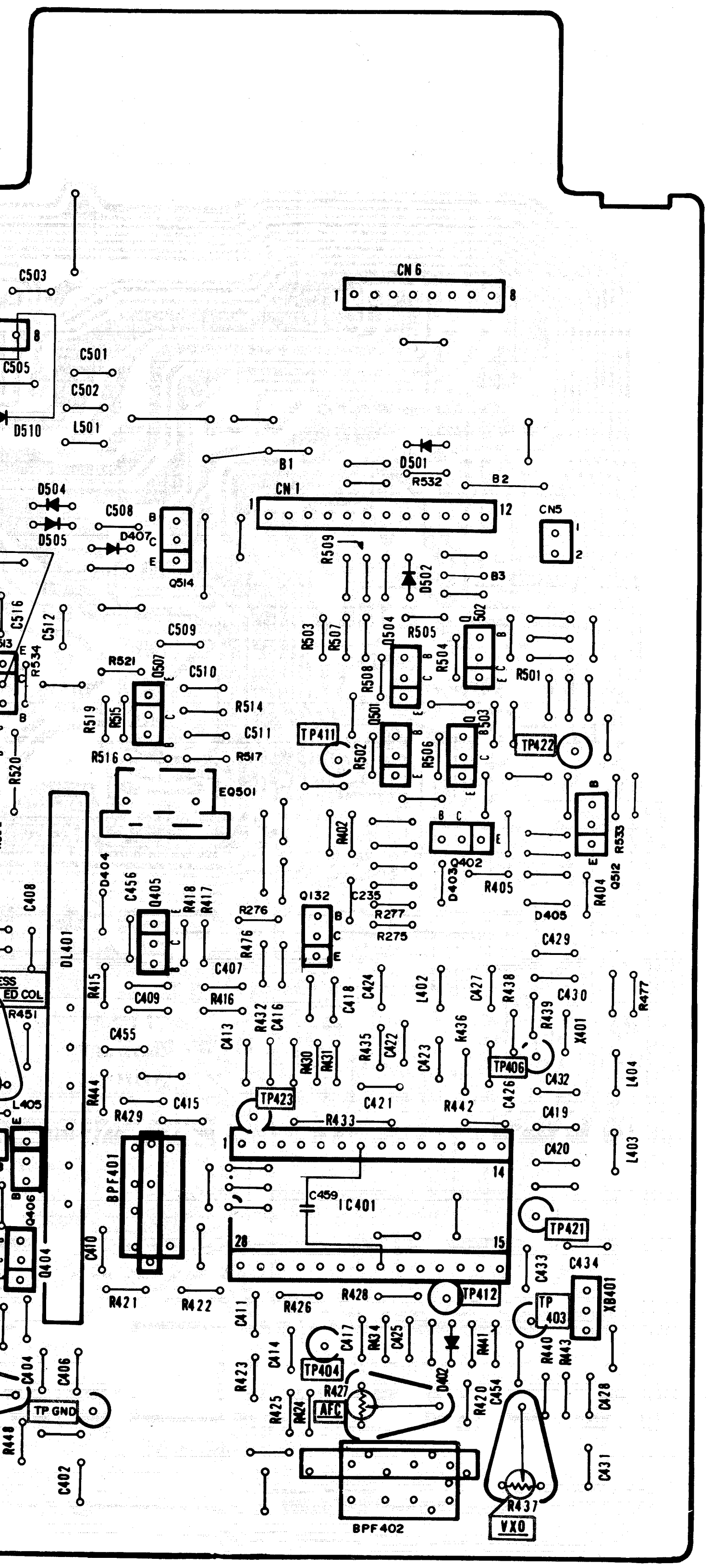
 IC401 ① Rec color out 0.7Vp-p	 IC401 ② ACC out 1.1Vp-p	 IC401 ④ Rec (PB) color in 0.22Vp-p (Rec), 0.38Vp-p (PB)	 IC401 ⑥ Sync in 5.5Vp-p
 IC401 ⑫ VCO out 1.4Vp-p 4.43MHz	 IC401 ⑬ VXO in 0.6Vp-p 4.43MHz	 TP403 VCO 0.4Vp-p (Fs+1/8Fh)	 TP412 Sub. conv. out 1.2Vp-p
 IC401 ⑳ PB color out 0.8Vp-p	 TP404 PB color 0.45Vp-p	 IC401 ㉖ 5.6MHz in (Fs+40Fh+1/8Fh) 0.23Vp-p	 TP510 Video out 0.9Vp-p
 TP411 Drum FF 7.5Vp-p	 TP125 Peaking 0.15Vp-p	 Q106 B PB Video (Y) in 0.7Vp-p	 TP126 Sharpness preset 1.1Vp-p
 IC102 ③ Sync out 8Vp-p	 IC102 ⑤ Video out 1.8Vp-p	 IC102 ⑦ Color mix in 0.2Vp-p	 IC102 ⑫ De-empha in 1Vp-p
 IC102 ⑬ Amp in 0.27Vp-p	 IC102 ⑭ Video (Y) 0.8Vp-p	 IC102 ㉔ Rec AGC out 0.58Vp-p	 IC102 ㉔ Demod. out 3.5Vp-p
 IC102 ㉖ Video in 0.9Vp-p	 TP103 W/D clip 1.1Vp-p	 IC103 ⑱ Clamp in 0.8Vp-p	 IC103 ㉒ DOC out 0.7Vp-p
 IC103 ㉘ Rec mod. out 1.4Vp-p	 TP106 PB FM 0.4Vp-p	 Q116 E Rec FM 0.45Vp-p	 TP123-4 CH-1,2 Rec out 4Vp-p

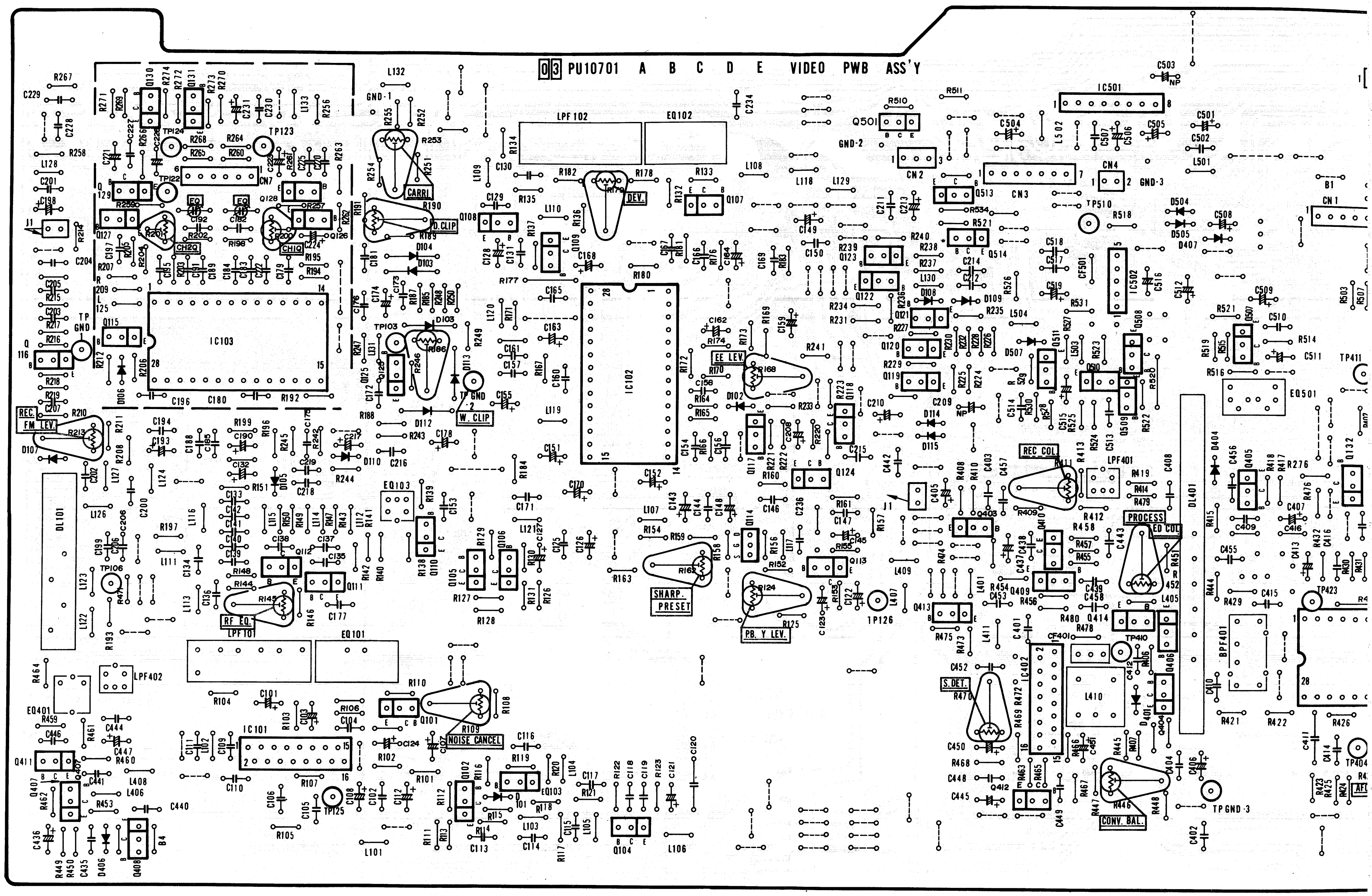
Video-Platte · Video circuit board 0 3 Typ -A-

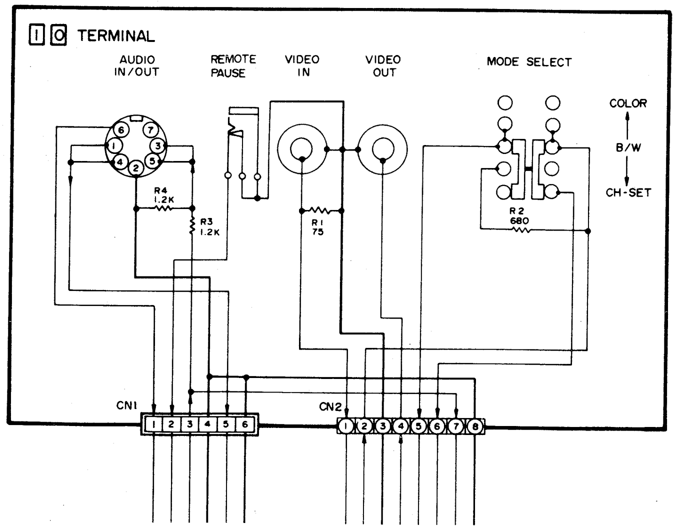

03 PU10701 C
VIDEO PWB ASS'Y
IC101
IC102
IC103
IC401
IC402
IC501
LPF101
LPF102
LPF402
EQ101
EQ102
EQ103
EQ401
EQ501
DL101
DL401
BPF401
BPF402
CN1
CN2
CN3
CN4
CN5
CN6
GND
TP GND
CARRI
DEV.
D.CLIP
W.CLIP
REC FM LEV.
RF EQ.
NOISE CANCEL
SHARP. PRESET
PB. Y LEV.
EE LEV.
REC COL.
PROCESS ED COL
S.DET
CONV. BAL.
AFC
VXO
TP123
TP124
TP125
TP126
TP401
TP403
TP404
TP406
TP411
TP412
TP421
TP422
TP423
TP510
XB401
L410

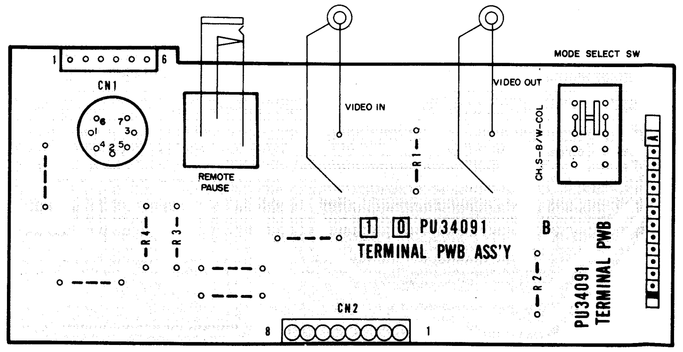

10 TERMINAL
AUDIO IN/OUT
CN1

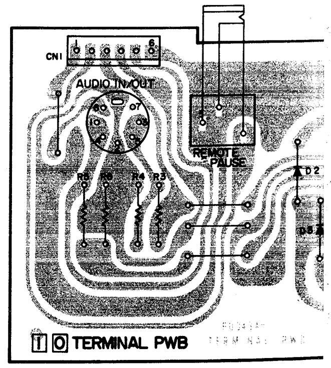
Video-Platte · Video circuit board 0 3 Typ -B-, -C-, -D-


CN6
CN1
CN5
C503
C505
C501
C502
L501
D510
D504
D505
C508
Q514
B1
D501
R532
B2
B3
R509
C509
C510
R514
C511
R517
R516
EQ501
TP411
TP422
Q405
Q132
R276
R277
R275
C235
Q402
D403
R405
D405
C429
C407
DL401
C409
R416
C455
C415
R429
TP423
R433
IC401
C459
BPF401
TP421
C434
TP412
TP 403
XB401
TP404
AFC
R427
TP GND
BPF402
R437
VXO
X401
TP406
C432
C419
C420
R421
R422
R426
R428

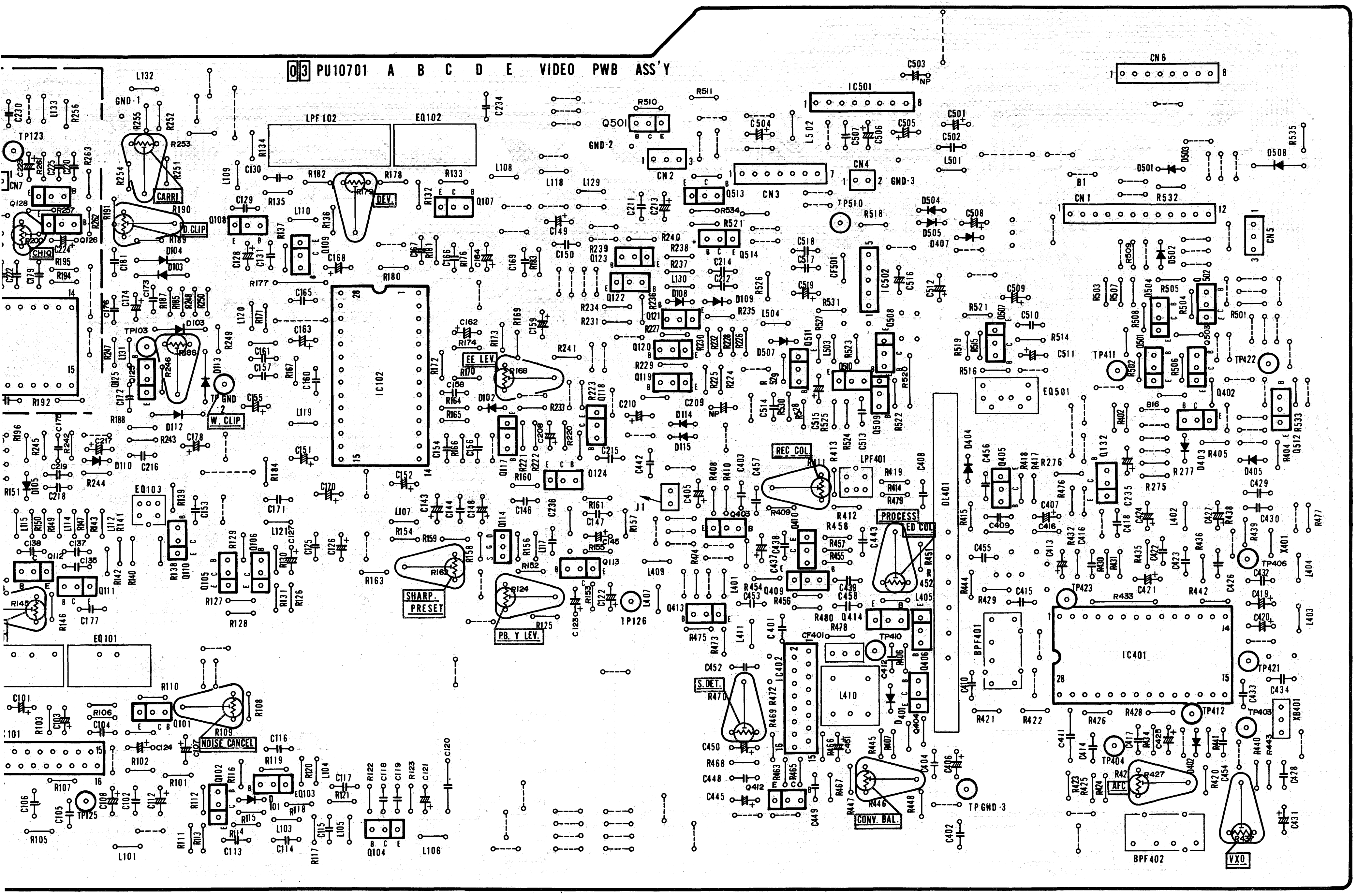

03 PU10701 A B C D E VIDEO PWB ASS'Y
IC103
IC102
IC101
IC501
LPF102
EQ102
LPF101
EQ101
EQ103
LPF401
LPF402
EQ401
EQ501
DL101
DL401
BPF401
IC402
L410
CN2
CN3
CN4
CN7
CN1
TP124
TP123
TP122
TP GND
TP103
TP106
TP125
TP126
TP510
TP411
TP423
TP410
TP404
TP GND-3
GND-1
GND-2
GND-3
CARRI.
DEV.
D.CLIP
W. CLIP
CH2Q
CH1Q
EQ
REC. FM LEV.
RF EQ.
EE LEV.
SHARP. PRESET
PB. Y LEV.
NOISE CANCEL
REC COL.
PROCESS
ED COL
S.DET.
CONV. BAL.
AFC
Q501
Q513
Q514
Q107
Q108
Q101
Q104
Q124
Q411
Q412
Q413
Q414
B1

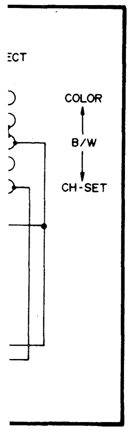

10 TERMINAL
AUDIO IN/OUT
REMOTE PAUSE
VIDEO IN
VIDEO OUT
MODE SELECT
COLOR
B/W
CH·SET
R4 1.2K
R3 1.2K
R1 75
R2 680
CN1
CN2
1 2 3 4 5 6
1 2 3 4 5 6 7 8

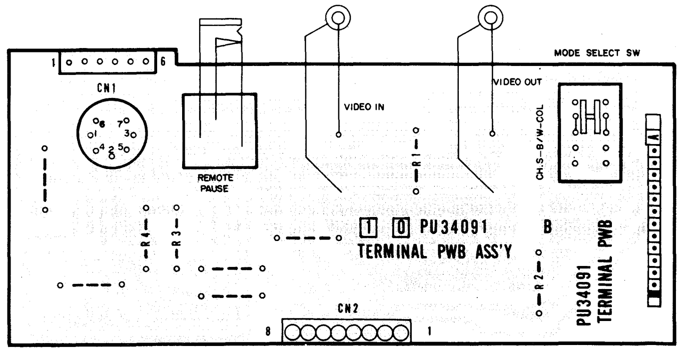

CN1
REMOTE PAUSE
VIDEO IN
VIDEO OUT
MODE SELECT SW
CH-S-B/W-COL
1 0 PU34091 B
TERMINAL PWB ASS'Y
PU34091 TERMINAL PWB
CN2
8
1
6

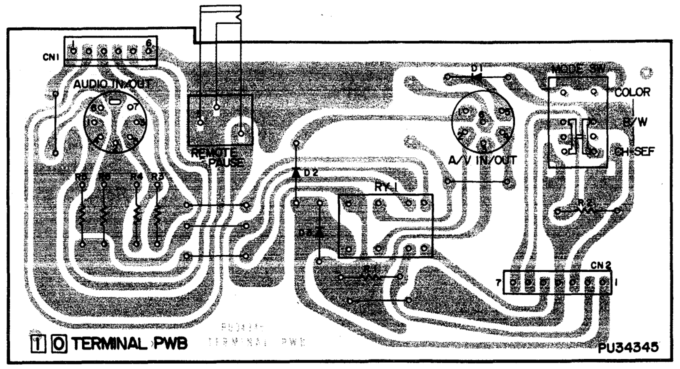

CN1
AUDIO IN/OUT
REMOTE PAUSE
1 0 TERMINAL PWB

ard 0 3 Typ -B-, -C-, -D-

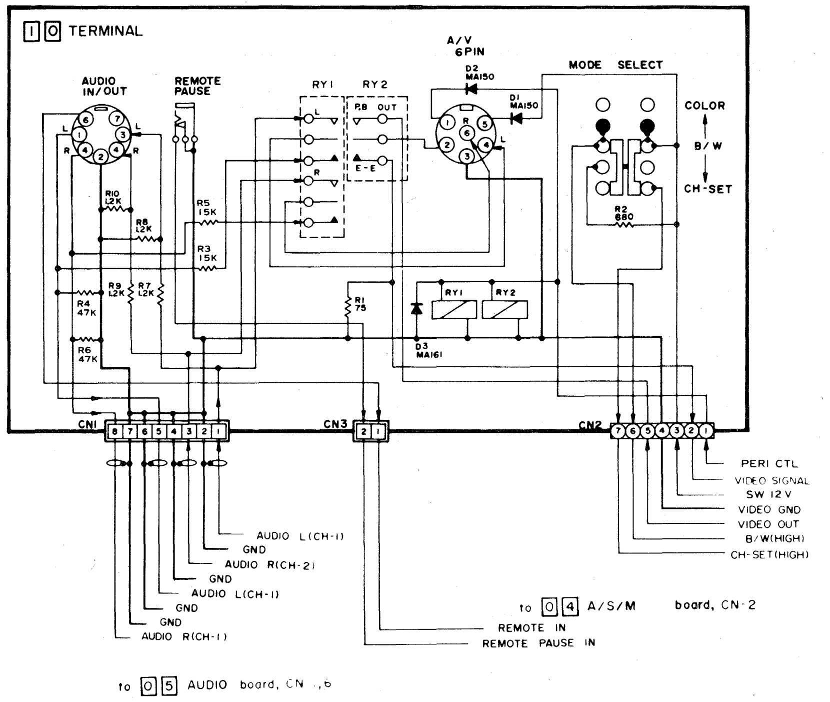

0 3 PU10701 A B C D E VIDEO PWB ASS'Y
LPF 102
EQ102
IC102
IC501
IC401
DL401
CN6
CN1
CN2
CN3
CN4
CN5
L132
GND-1
GND-2
GND-3
TP123
CARRI
DEV.
D.CLIP
CHIQ
W. CLIP
EE LEV.
REC COL
PROCESS
ED COL
SHARP. PRESET
PB. Y LEV.
NOISE CANCEL
S.DET.
CONV. BAL.
AFC
VXO
LPF401
BPF401
BPF402
EQ501
EQ101
EQ103
L410
TP GND-3
TP510
TP410
TP411
TP412
TP421
TP422
TP423
TP403
TP404
TP406
TP125
TP126
TP103

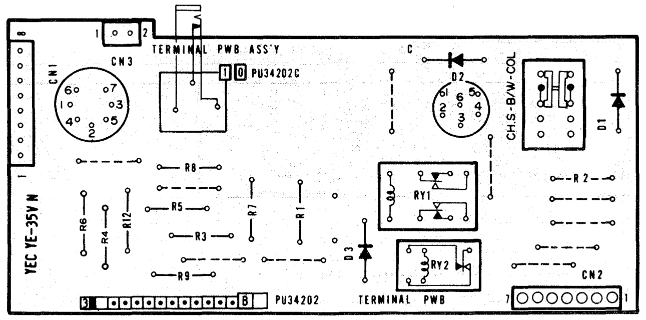

COLOR
B/W
CH-SET

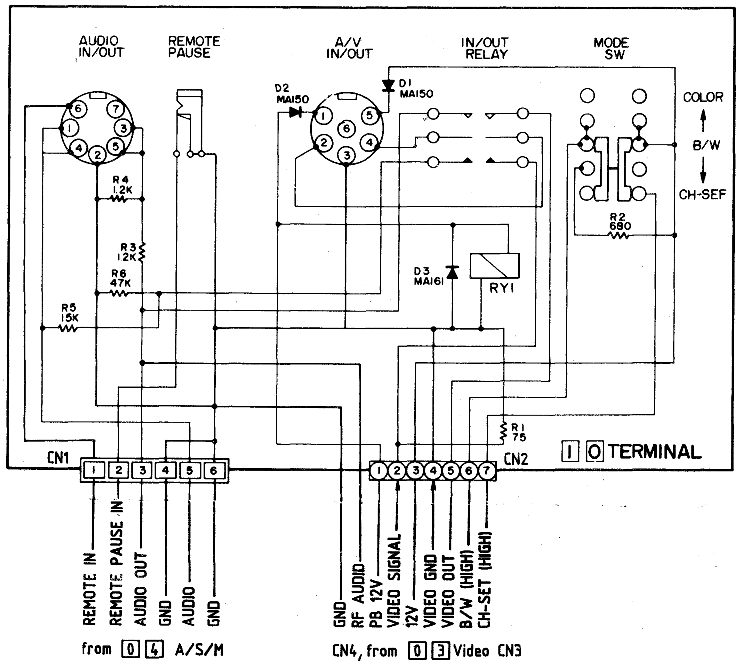

CN1
REMOTE PAUSE
VIDEO IN
VIDEO OUT
MODE SELECT SW
CH-S-B/W-COL
1 0 PU34091
TERMINAL PWB ASS'Y
PU34091 TERMINAL PWB
CN2


CN1
AUDIO IN/OUT
REMOTE PAUSE
A/V IN/OUT
COLOR
B/W
CH-SEF
RY1
D2
CN2
1 0 TERMINAL PWB
PU34345

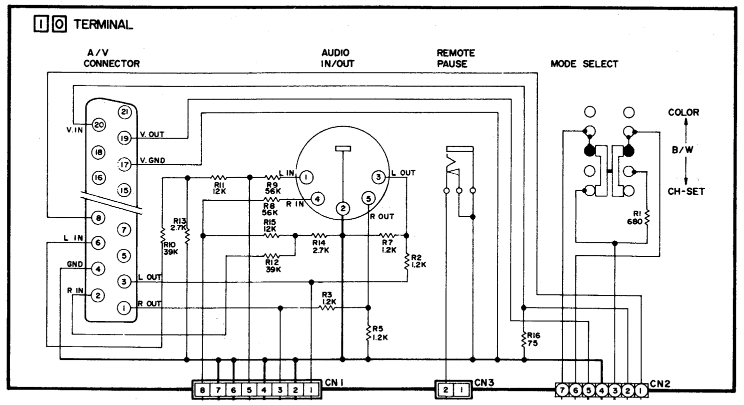
Anschlußbuchsen-Platten · Terminals

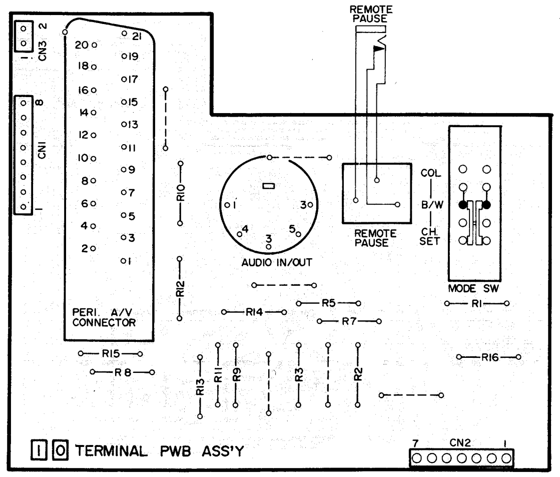

1 0 TERMINAL
AUDIO IN/OUT
REMOTE PAUSE
RY1
RY2
A/V 6PIN
D2 MA150
D1 MA150
MODE SELECT
COLOR
B/W
CH-SET
R2 680
R10 12K
R8 12K
R5 15K
R3 15K
R9 12K
R7 12K
R4 47K
R6 47K
R1 75
D3 MA161
CN1
CN3
CN2
PERI CTL
VIDEO SIGNAL
SW 12 V
VIDEO GND
VIDEO OUT
B/W(HIGH)
CH-SET(HIGH)
AUDIO L(CH-1)
GND
AUDIO R(CH-2)
GND
AUDIO L(CH-1)
GND
AUDIO R(CH-1)
to 0 4 A/S/M board, CN-2
REMOTE IN
REMOTE PAUSE IN
to 0 5 AUDIO board, CN 5

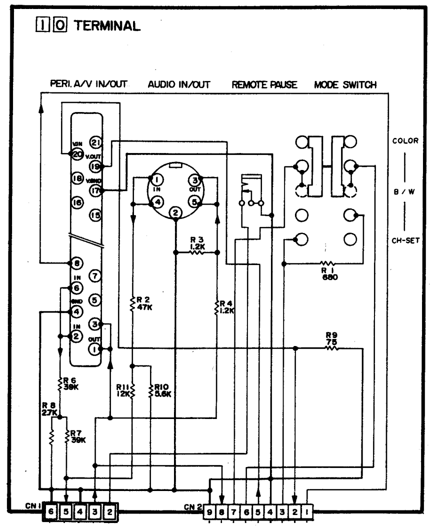

CN1
CN3
TERMINAL PWB ASS'Y
1 0 PU34202C
CH-S-B/W-COL
D1
D2
RY1
RY2
R1
R2
R3
R5
R6
R7
R8
R9
R12
D3
YEC YE-35V N
PU34202
TERMINAL PWB
CN2

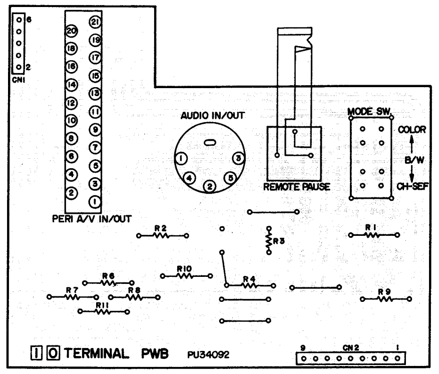

AUDIO IN/OUT
REMOTE PAUSE
A/V IN/OUT
IN/OUT RELAY
MODE SW
D2 MA150
D1 MA150
COLOR
B/W
CH-SEF
R4 12K
R3 12K
R6 47K
R5 15K
R2 680
D3 MA161
RY1
R1 75
CN1
CN2
1 0 TERMINAL
REMOTE IN
REMOTE PAUSE IN
AUDIO OUT
GND
AUDIO
GND
from 0 4 A/S/M
GND
RF AUDIO
PB 12V
VIDEO SIGNAL
12V
VIDEO GND
VIDEO OUT
B/W (HIGH)
CH-SET (HIGH)
CN4, from 0 3 Video CN3

Anschlußbuchsen-Platten · Terminals


1 0 TERMINAL
A/V CONNECTOR
AUDIO IN/OUT
REMOTE PAUSE
MODE SELECT
COLOR
B/W
CH-SET
CN1
CN3
CN2

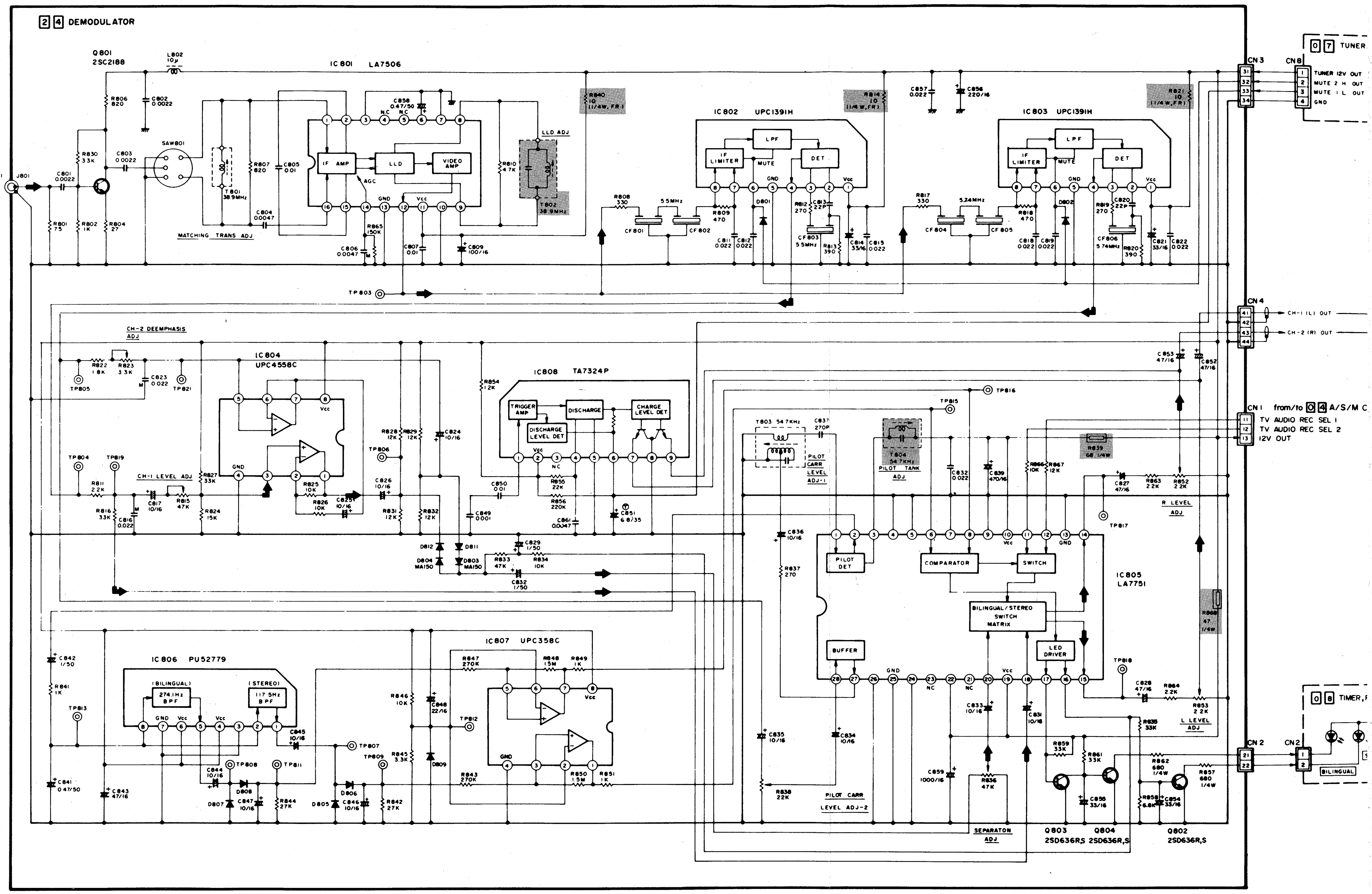

REMOTE PAUSE
CN3
CN1
AUDIO IN/OUT
COL
B/W
CH. SET
MODE SW
PERI. A/V CONNECTOR
1 0 TERMINAL PWB ASS'Y
CN2


1 0 TERMINAL
PERI A/V IN/OUT
AUDIO IN/OUT
REMOTE PAUSE
MODE SWITCH
COLOR
B/W
CH-SET
CN3
CN2


AUDIO IN/OUT
MODE SW.
COLOR
B/W
CH-SET
REMOTE PAUSE
PERI A/V IN/OUT
CN1
1 0 TERMINAL PWB PU34092
CN2

Audio- und Demodulator-Schaltungen · Audio and Demodulator circuits

Typ -A-


2 4 DEMODULATOR
Q801 2SC2188
IC801 LA7506
IC802 UPC1391H
IC803 UPC1391H
IC804 UPC4558C
IC805 LA7751
IC806 PU52779
IC807 UPC358C
IC808 TA7324P
(from TUNER/IF board) IF SIGNAL IN
J801
SAW801
MATCHING TRANS ADJ
LLD ADJ
T802 38.9MHz
T801 38.9MHz
IF AMP
LLD
VIDEO AMP
AGC
LPF
IF LIMITER
MUTE
DET
CH-2 DEEMPHASIS ADJ
CH-1 LEVEL ADJ
TRIGGER AMP
DISCHARGE
DISCHARGE LEVEL DET
CHARGE LEVEL DET
T803 54.7KHz
T804 54.7KHz PILOT TANK ADJ
PILOT CARR LEVEL ADJ-1
PILOT CARR LEVEL ADJ-2
PILOT DET
COMPARATOR
SWITCH
BILINGUAL/STEREO SWITCH MATRIX
BUFFER
LED DRIVER
(BILINGUAL) 274.1Hz BPF
(STEREO) 117.5Hz BPF
R LEVEL ADJ
L LEVEL ADJ
SEPARATON ADJ
Q803 2SD636RS
Q804 2SD636R,S
Q802 2SD636R,S
CN3
CN8
0 7 TUNER
TUNER 12V OUT
MUTE 2 H OUT
MUTE 1 L OUT
GND
CN4
CH-1 (L) OUT
CH-2 (R) OUT
CN1 from/to 0 4 A/S/M
TV AUDIO REC SEL 1
TV AUDIO REC SEL 2
12V OUT
CN2
0 8 TIMER
BILINGUAL

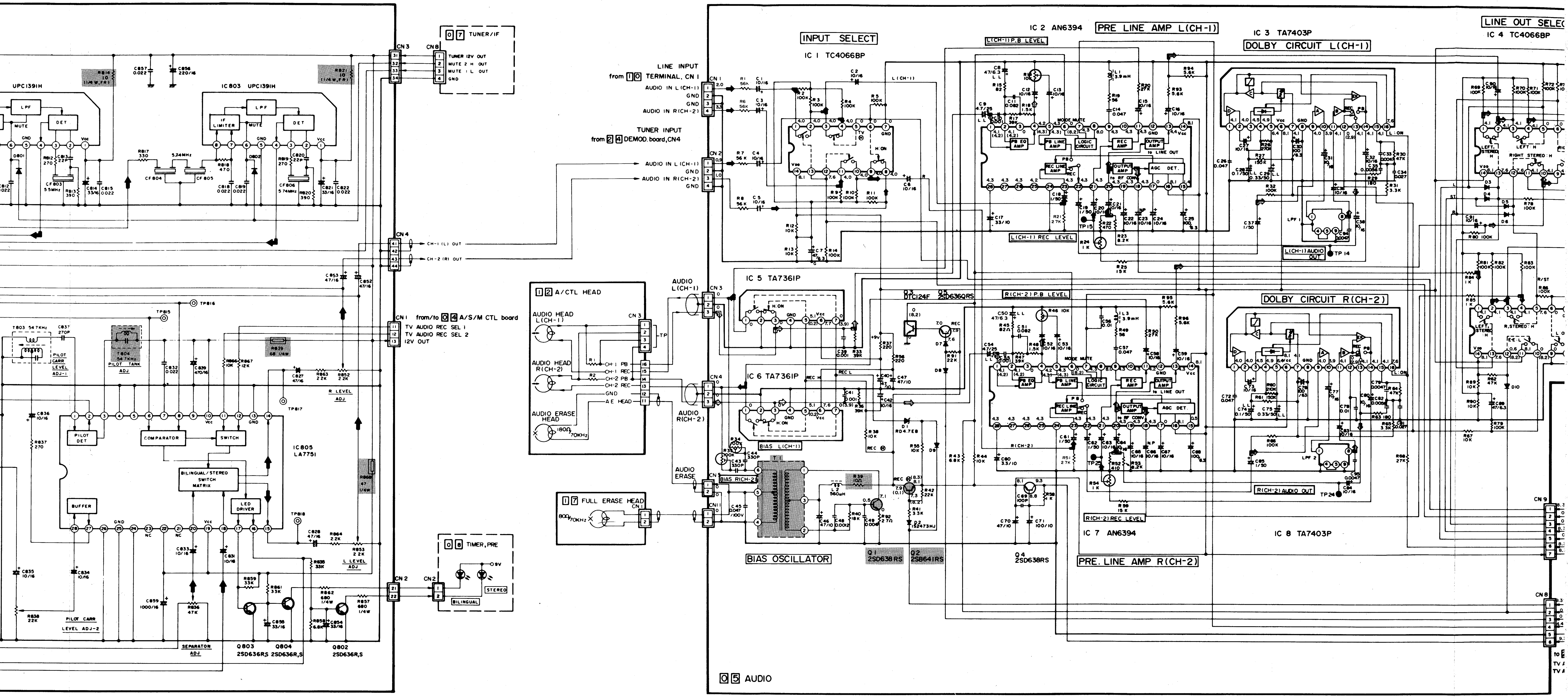
NOTE: Unless other wise specified.
1. All diodes are 1SS133.

Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen
bei Aufnahme
() bei Wiedergabe

All DC voltages are measured with a digital voltmeter at record mode
() at playback

▨ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!
Replace safety components only with original spare parts!

Typ -A-

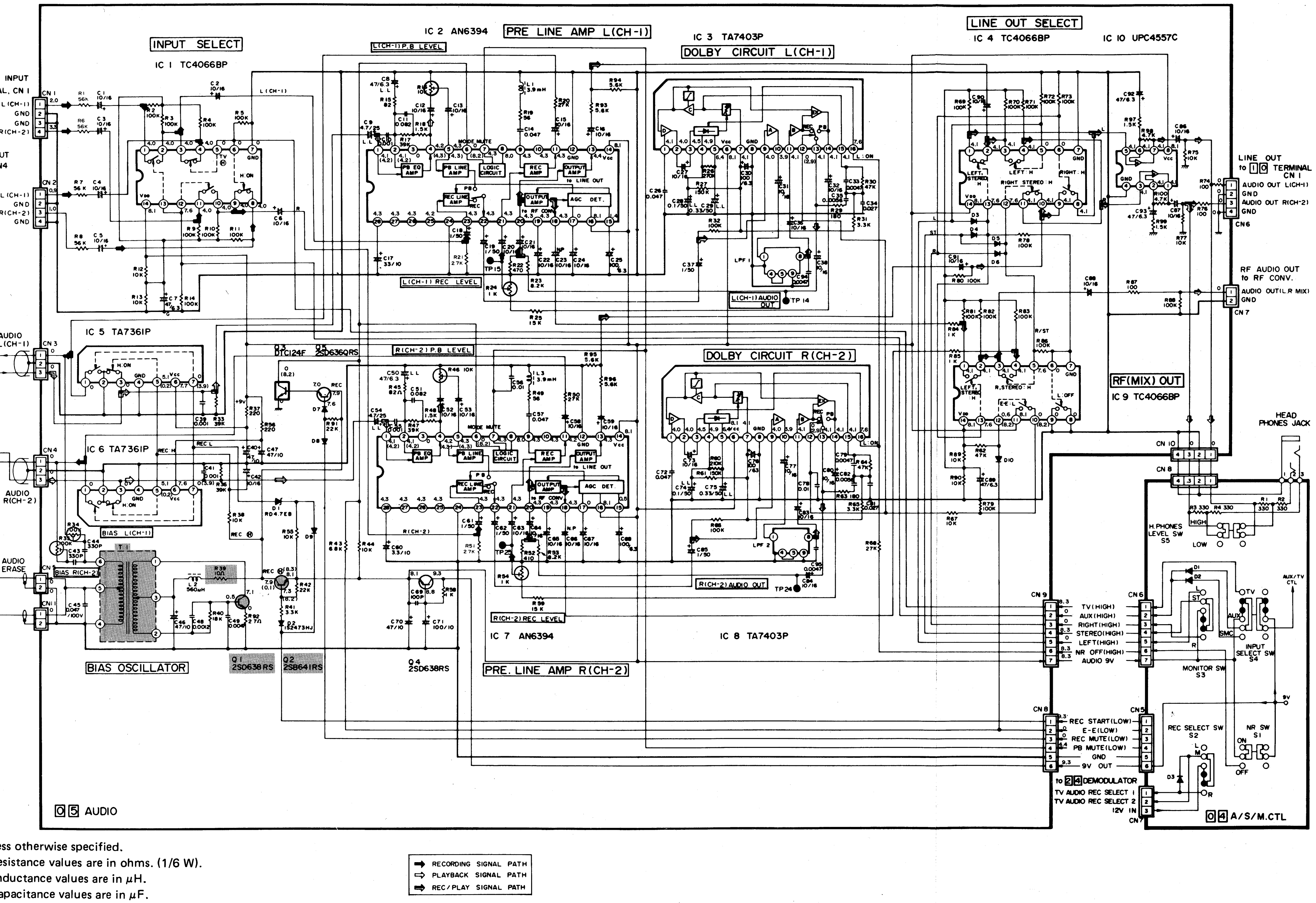

UPC1391H
IC803 UPC1391H
LPF
DET
IF LIMITER
MUTE
CF803 5.5MHz
CF804
CF805
CF806 5.74MHz
5.74MHz
CN3
CN8
07 TUNER/IF
TUNER 12V OUT
MUTE 2 H OUT
MUTE 1 L OUT
GND
CN4
CH-1 (L) OUT
CH-2 (R) OUT
CN1 from/to 04 A/S/M CTL board
TV AUDIO REC SEL 1
TV AUDIO REC SEL 2
12V OUT
T803 5.47KHz
PILOT CARR LEVEL ADJ-1
T804 54.7KHz
PILOT TANK ADJ
R LEVEL ADJ
L LEVEL ADJ
PILOT DET
COMPARATOR
SWITCH
IC805 LA7751
BILINGUAL/STEREO SWITCH MATRIX
BUFFER
LED DRIVER
PILOT CARR LEVEL ADJ-2
SEPARATON ADJ
Q803 2SD636RS
Q804 2SD636R,S
Q802 2SD636R,S
CN2
08 TIMER,PRE
9V
STEREO
BILINGUAL
12 A/CTL HEAD
AUDIO HEAD L(CH-1)
AUDIO HEAD R(CH-2)
AUDIO ERASE HEAD
180Ω 70KHz
CH-1 PB
CH-1 REC
CH-2 PB
CH-2 REC
GND
A.E HEAD
17 FULL ERASE HEAD
80Ω/70KHz
LINE INPUT from 10 TERMINAL, CN1
AUDIO IN L(CH-1)
GND
AUDIO IN R(CH-2)
TUNER INPUT from 24 DEMOD. board, CN4
AUDIO L(CH-1)
AUDIO R(CH-2)
AUDIO ERASE
INPUT SELECT
IC 1 TC4066BP
IC 2 AN6394
PRE LINE AMP L(CH-1)
L(CH-1) P.B LEVEL
IC 3 TA7403P
DOLBY CIRCUIT L(CH-1)
LINE OUT SELE
IC 4 TC4066BP
PB EQ AMP
PB LINE AMP
LOGIC CIRCUIT
REC AMP
OUTPUT AMP
AGC DET.
REC LINE AMP
RF CONV
L(CH-1) REC LEVEL
L(CH-1) AUDIO OUT
TP 14
TP15
IC 5 TA7361P
IC 6 TA7361P
H.ON
BIAS L(CH-1)
BIAS R(CH-2)
BIAS OSCILLATOR
Q1 2SD638RS
Q2 2SB641RS
Q3 DTC124F
Q5 2SD636QRS
Q4 2SD638RS
R(CH-2) P.B LEVEL
DOLBY CIRCUIT R(CH-2)
R(CH-2) REC LEVEL
R(CH-2) AUDIO OUT
TP24
IC 7 AN6394
IC 8 TA7403P
PRE. LINE AMP R(CH-2)
LPF 1
LPF 2
LEFT, STEREO H
RIGHT STEREO H
R, STEREO H
CN 9
CN 8
05 AUDIO

NOTES: Unless otherwise specified.

1. All resistance values are in ohms. (1/6 W).
2. All inductance values are in μH.
3. All capacitance values are in μF.

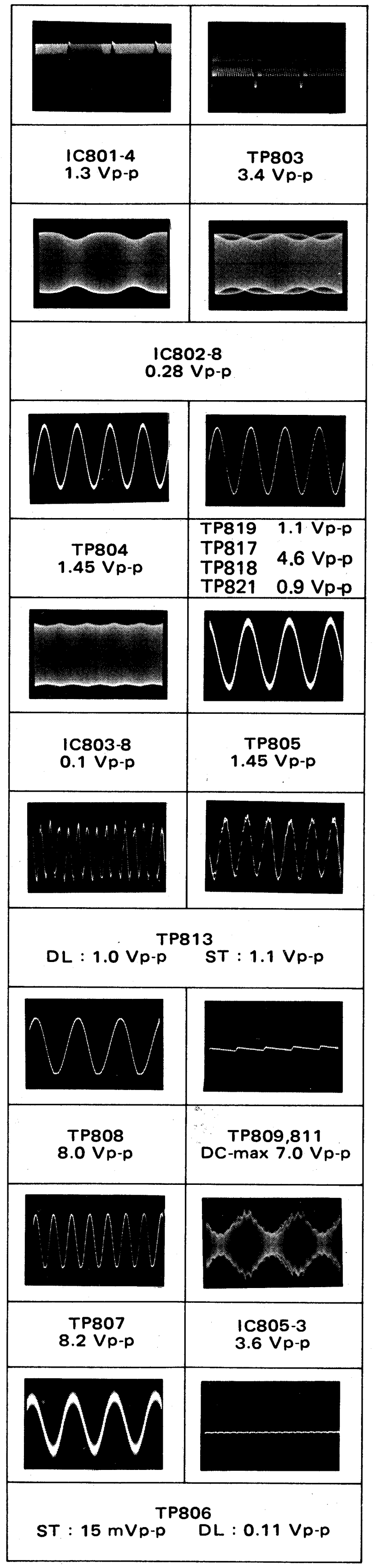
➡	RECORDING SIGNAL PATH
⇨	PLAYBACK SIGNAL PATH
➡	REC/PLAY SIGNAL PATH

Oszillogramme der Audio- und Demodulator-Schaltung
Main waveforms of Audio an Demodulator circuits

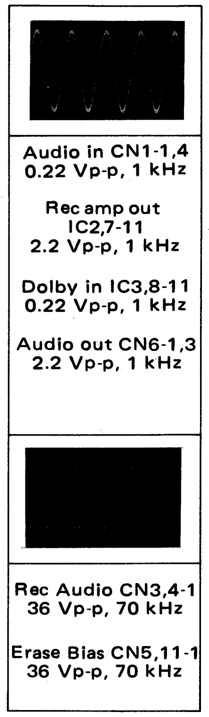

INPUT SELECT
IC 1 TC4066BP
IC 2 AN6394
PRE LINE AMP L(CH-1)
L(CH-1) P.B LEVEL
IC 3 TA7403P
DOLBY CIRCUIT L(CH-1)
LINE OUT SELECT
IC 4 TC4066BP
IC 10 UPC4557C
L(CH-1) REC LEVEL
L(CH-1) AUDIO OUT
TP 14
TP15
IC 5 TA7361P
IC 6 TA7361P
R(CH-2) P.B LEVEL
DOLBY CIRCUIT R(CH-2)
RF(MIX) OUT
IC 9 TC4066BP
R(CH-2) AUDIO OUT
TP24
R(CH-2) REC LEVEL
IC 7 AN6394
IC 8 TA7403P
PRE. LINE AMP R(CH-2)
BIAS OSCILLATOR
BIAS L(CH-1)
BIAS R(CH-2)
Q1 2SD638RS
Q2 2SB641RS
Q3 DTC124F
Q4 2SD638RS
Q5 2SD638RS
LINE OUT to 1 0 TERMINAL CN 1
AUDIO OUT L(CH-1)
GND
AUDIO OUT R(CH-2)
CN6
RF AUDIO OUT to RF CONV.
AUDIO OUT(L.R MIX)
CN 7
HEAD PHONES JACK
CN 10
CN 8
H.PHONES LEVEL SW S5
HIGH
LOW
CN 9
TV(HIGH)
AUX(HIGH)
RIGHT(HIGH)
STEREO(HIGH)
LEFT(HIGH)
NR OFF(HIGH)
AUDIO 9V
INPUT SELECT SW S4
MONITOR SW S3
AUX/TV CTL
REC START(LOW)
E-E(LOW)
REC MUTE(LOW)
PB MUTE(LOW)
GND
9V OUT
REC SELECT SW S2
NR SW S1
ON
OFF
to 2 4 DEMODULATOR
TV AUDIO REC SELECT 1
TV AUDIO REC SELECT 2
12V IN
0 4 A/S/M.CTL
0 5 AUDIO
INPUT L, CN 1
L(CH-1)
GND
R(CH-2)
AUDIO L(CH-1)
AUDIO R(CH-2)
AUDIO ERASE
RECORDING SIGNAL PATH
PLAYBACK SIGNAL PATH
REC/PLAY SIGNAL PATH

ess otherwise specified.
esistance values are in ohms. (1/6 W).
nductance values are in μH.
apacitance values are in μF.

Demodulator circuit

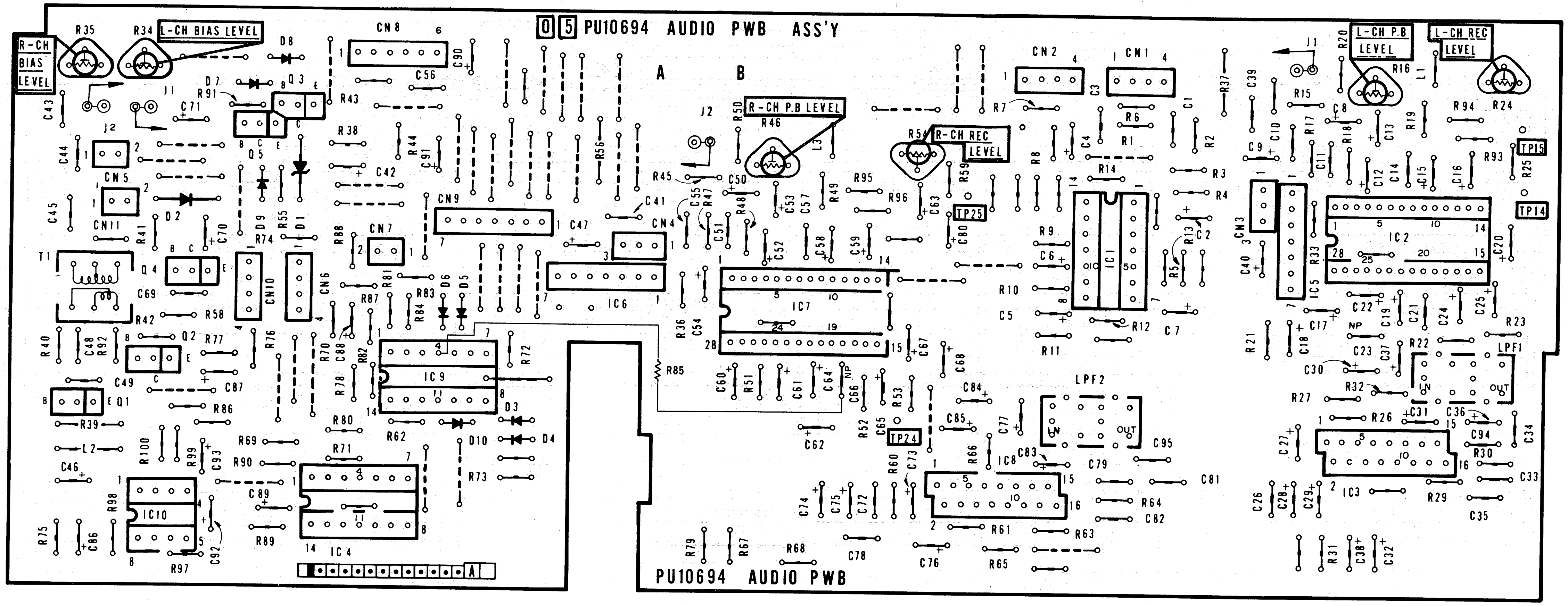


Audio circuit



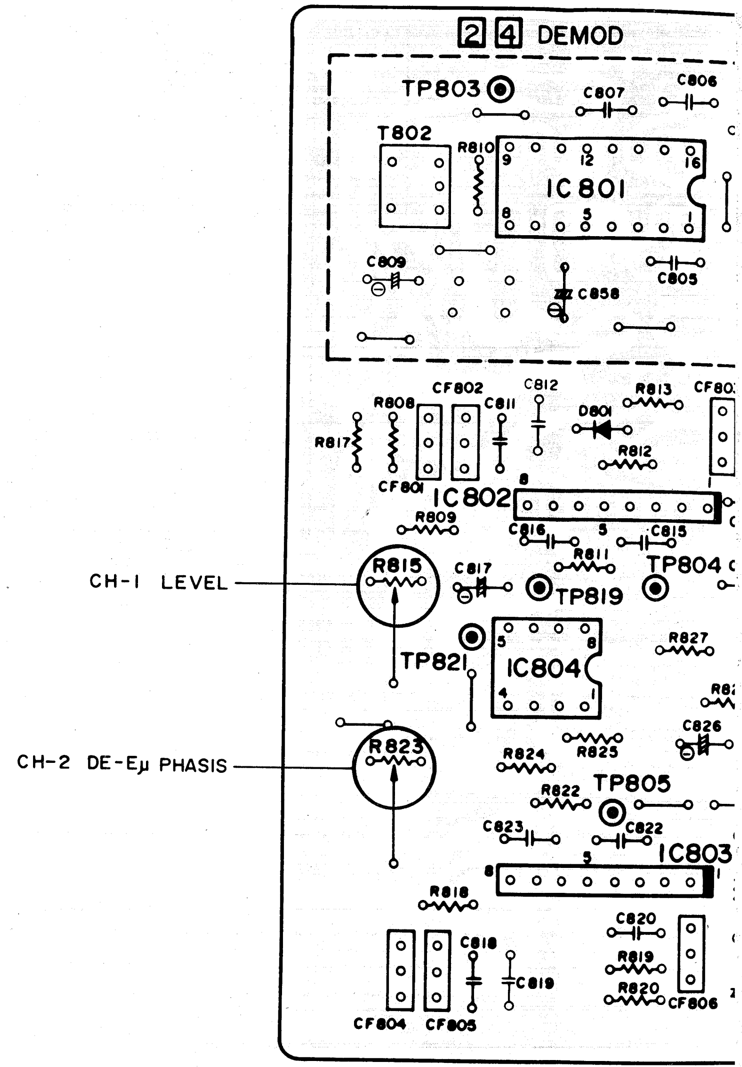
Audio-Platte · Audio circuit board 0 5 Typ -A-

– AUDIO –

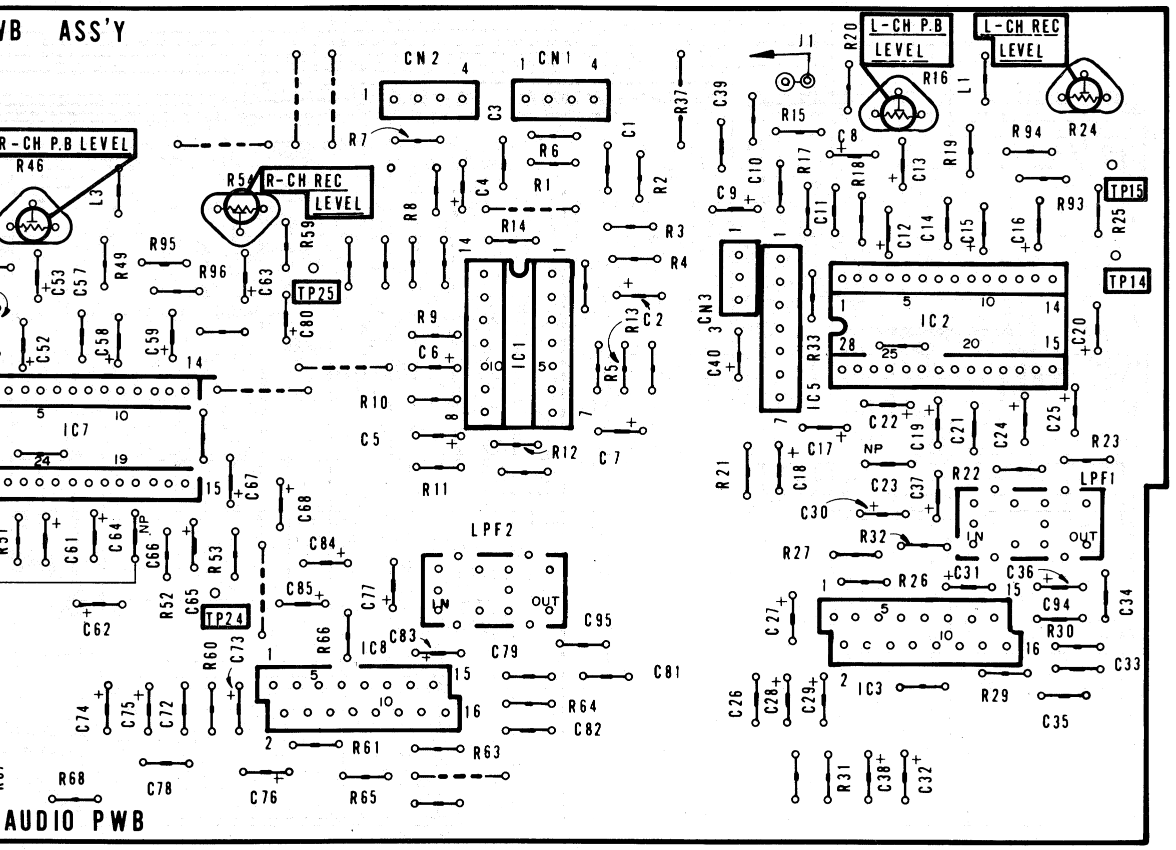

0 5 PU10694 AUDIO PWB ASS'Y
R-CH BIAS LEVEL
L-CH BIAS LEVEL
R-CH P.B LEVEL
R-CH REC LEVEL
L-CH P.B LEVEL
L-CH REC LEVEL
A
B
CN 8
CN 2
CN 1
CN 9
CN 7
CN 6
CN 10
CN 11
CN 5
CN 4
CN 3
IC 1
IC 2
IC 3
IC 4
IC 5
IC 6
IC 7
IC 8
IC 9
IC10
LPF1
LPF2
T1
J1
J2
TP14
TP15
TP24
TP25
PU10694 AUDIO PWB

Demodulator-Platte · De

– DEMODULATOR –

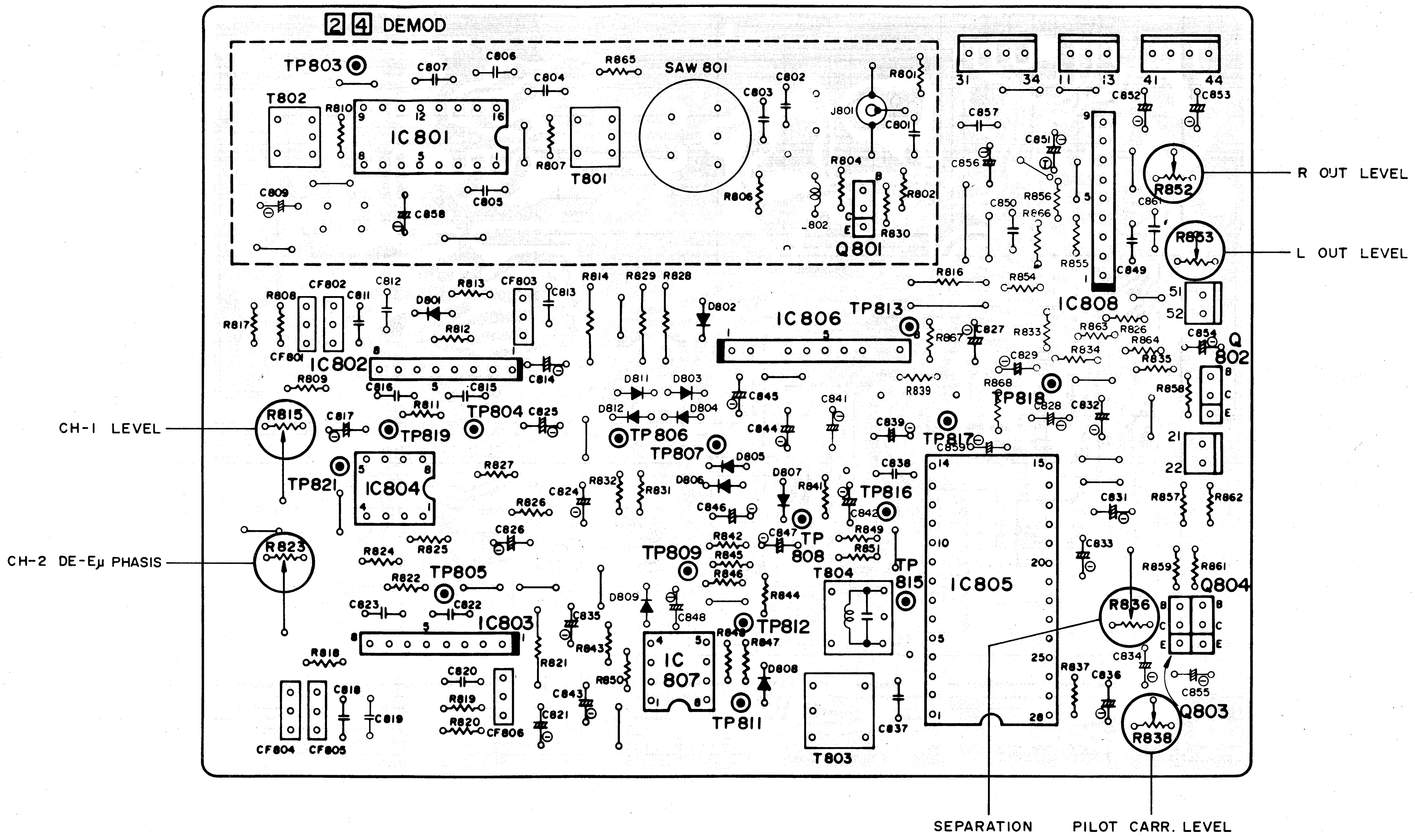

2 4 DEMOD
TP803
T802
IC801
IC802
IC803
IC804
TP804
TP805
TP819
TP821
R815
R823
CH-1 LEVEL
CH-2 DE-Eμ PHASIS

Demodulator-Platte · Demodulator circuit board 2 4 Typ -A-



B ASS'Y
CN2
CN1
L-CH P.B LEVEL
L-CH REC LEVEL
R-CH P.B LEVEL
R-CH REC LEVEL
J1
IC1
IC2
IC3
IC7
IC8
LPF1
LPF2
TP14
TP15
TP24
TP25
AUDIO PWB

– DEMODULATOR –

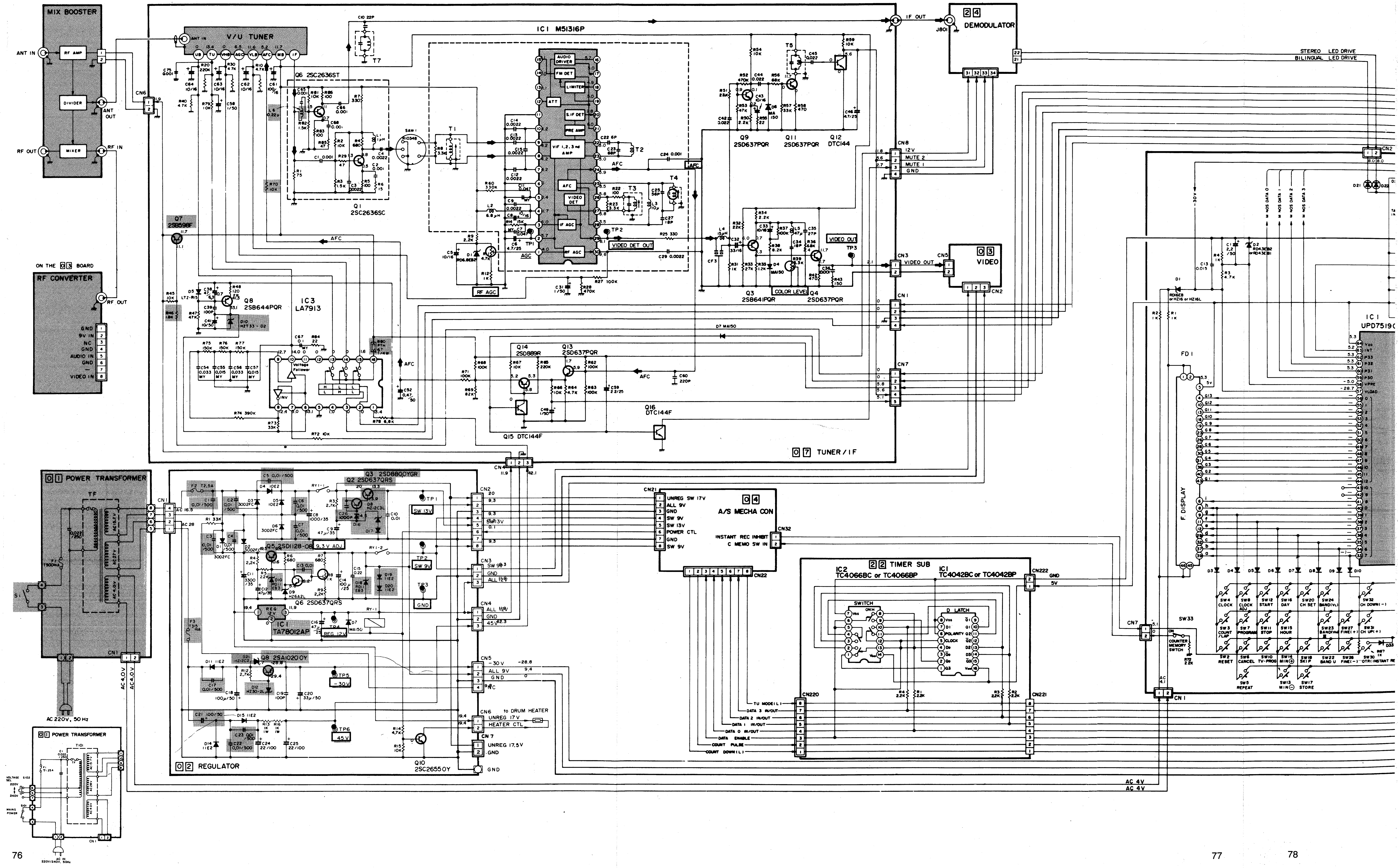


2 4 DEMOD
TP803
SAW 801
IC801
T801
T802
J801
Q801
IC802
IC803
IC804
IC805
IC806
IC807
IC808
T803
T804
Q802
Q803
Q804
TP804
TP805
TP806
TP807
TP808
TP809
TP811
TP812
TP813
TP815
TP816
TP817
TP818
TP819
TP821
CH-1 LEVEL
CH-2 DE-Eμ PHASIS
R OUT LEVEL
L OUT LEVEL
SEPARATION
PILOT CARR. LEVEL
R815
R823
R852
R853
R836
R838

Tuner/ZF-Schaltung · Tuner/IF circuit Typ -A-

Regelnetzteil-Schaltung · Regulator circuit

Timer/Voreinste


MIX BOOSTER
ANT IN
RF AMP
DIVIDER
MIXER
ANT OUT
RF OUT
RF IN
V/U TUNER
IC1 M51316P
IF OUT
24 DEMODULATOR
STEREO LED DRIVE
BILINGUAL LED DRIVE
Q6 2SC2636ST
Q1 2SC2636SC
Q7 2SB598F
ON THE 03 BOARD
RF CONVERTER
GND
9V IN
NC
GND
AUDIO IN
GND
VIDEO IN
Q8 2SB644PQR
IC3 LA7913
Voltage Follower
INV
AUDIO DRIVER
FM DET
LIMITER
ATT
S.IF DET
PRE AMP
VIF 1,2,3 nd AMP
AFC
VIDEO DET
IF AGC
RF AGC
VIDEO DET OUT
AFC
Q9 2SD637PQR
Q11 2SD637PQR
Q12 DTC144
12V
MUTE 2
MUTE 1
GND
Q3 2SB641PQR
Q4 2SD637PQR
COLOR LEVEL
VIDEO OUT
03 VIDEO
Q14 2SD889R
Q13 2SD637PQR
Q15 DTC144F
Q16 DTC144F
07 TUNER / IF
01 POWER TRANSFORMER
AC 220V, 50 Hz
Q3 2SD880QYGR
Q2 2SD637QRS
Q5 2SD1128-08
Q6 2SD637QRS
IC1 TA78012AP
REG 12V
9.3 V ADJ
SW 13V
SW 9V
GND
Q8 2SA1020OY
-30V
45V
to DRUM HEATER
UNREG 17V
HEATER CTL
UNREG 17.5V
GND
Q10 2SC2655OY
02 REGULATOR
04 A/S MECHA CON
UNREG SW 17V
ALL 9V
GND
SW 9V
SW 13V
POWER CTL
GND
SW 9V
INSTANT REC INHIBIT
C MEMO SW IN
22 TIMER SUB
IC2 TC4066BC or TC4066BP
IC1 TC4042BC or TC4042BP
SWITCH
D LATCH
TU MODE(L)
DATA 3 IN/OUT
DATA 2 IN/OUT
DATA 1 IN/OUT
DATA 0 IN/OUT
DATA ENABLE
COUNT PULSE
COUNT DOWN(L)
AC 4V
AC 4V
F. DISPLAY
IC1 UPD7519
SW4 CLOCK
SW8 CLOCK ADJ
SW12 START
SW16 DAY
SW20 CH SET
SW24 BAND(VL)
SW3 COUNT /LAP
SW7 PROGRAM
SW11 STOP
SW15 HOUR
SW23 BAND(VH)
SW27 FINE(+)
SW31 CH UP(+)
SW2 RESET
SW6 CANCEL
SW10 TV-PROG
SW14 MIN(+)
SW18 SKIP
SW22 BAND U
SW26 FINE(-)
SW30 OTR(INSTANT REC)
SW5 REPEAT
SW13 MIN(-)
SW17 STORE
SW33 COUNTER MEMORY SWITCH
01 POWER TRANSFORMER
VOLTAGE SEL
MAINS POWER
AC IN 220V/240V, 50Hz

Regelnetzteil-Schaltung · Regulator circuit

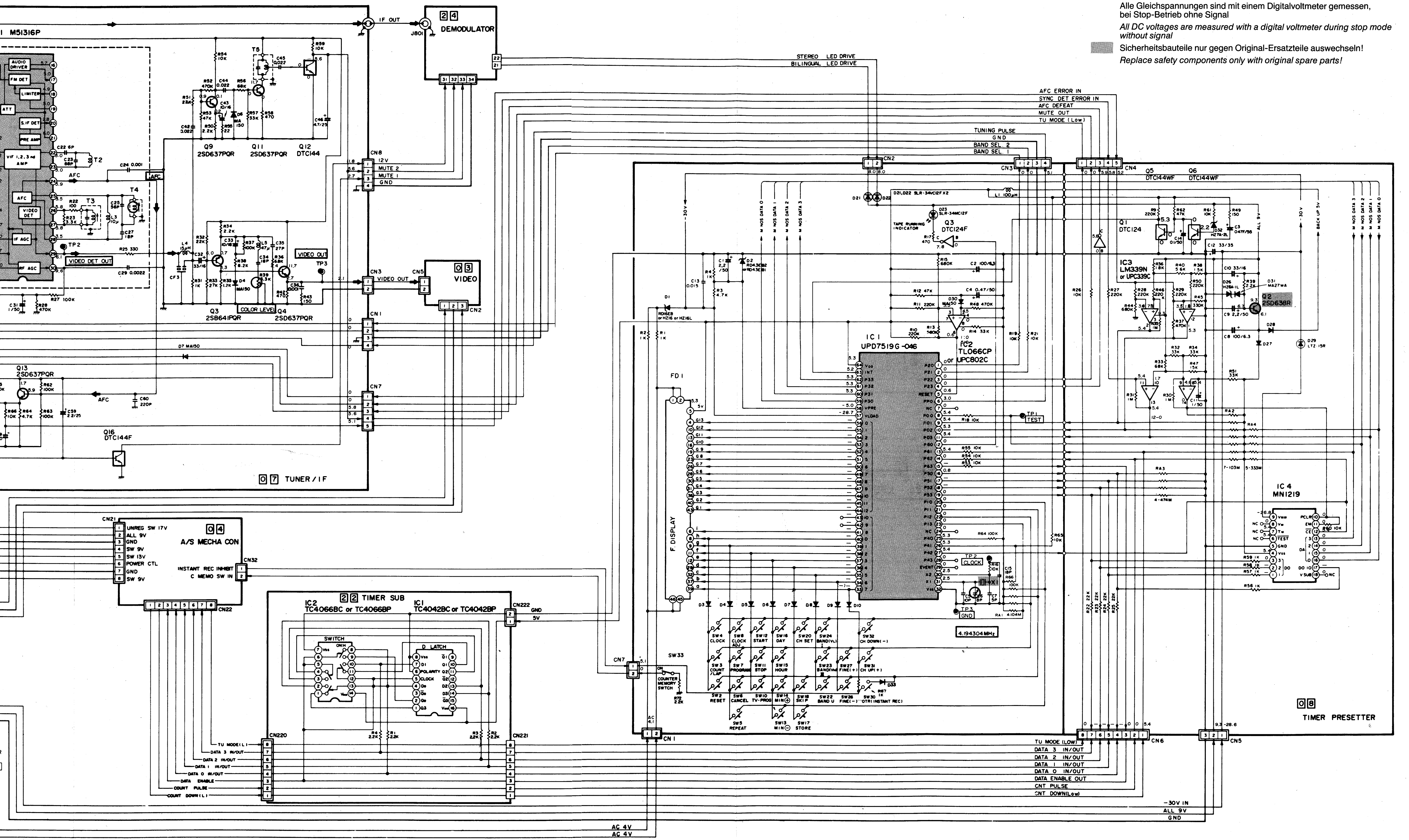
Timer/Voreinsteller-Schaltung · Timer/Presetter circuit Typ -A-, -B-

Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen, bei Stop-Betrieb ohne Signal

All DC voltages are measured with a digital voltmeter during stop mode without signal

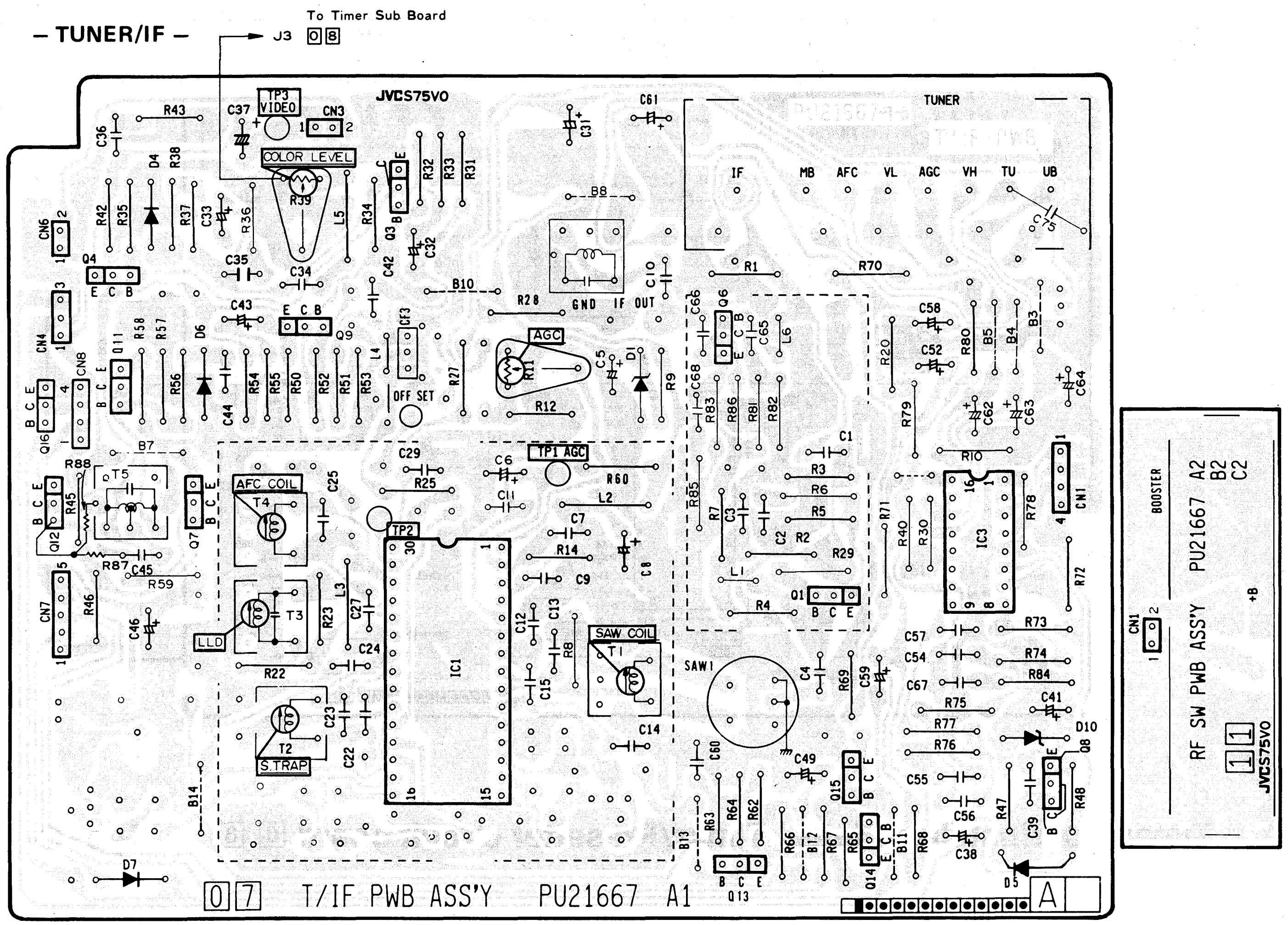
▨ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

Replace safety components only with original spare parts!

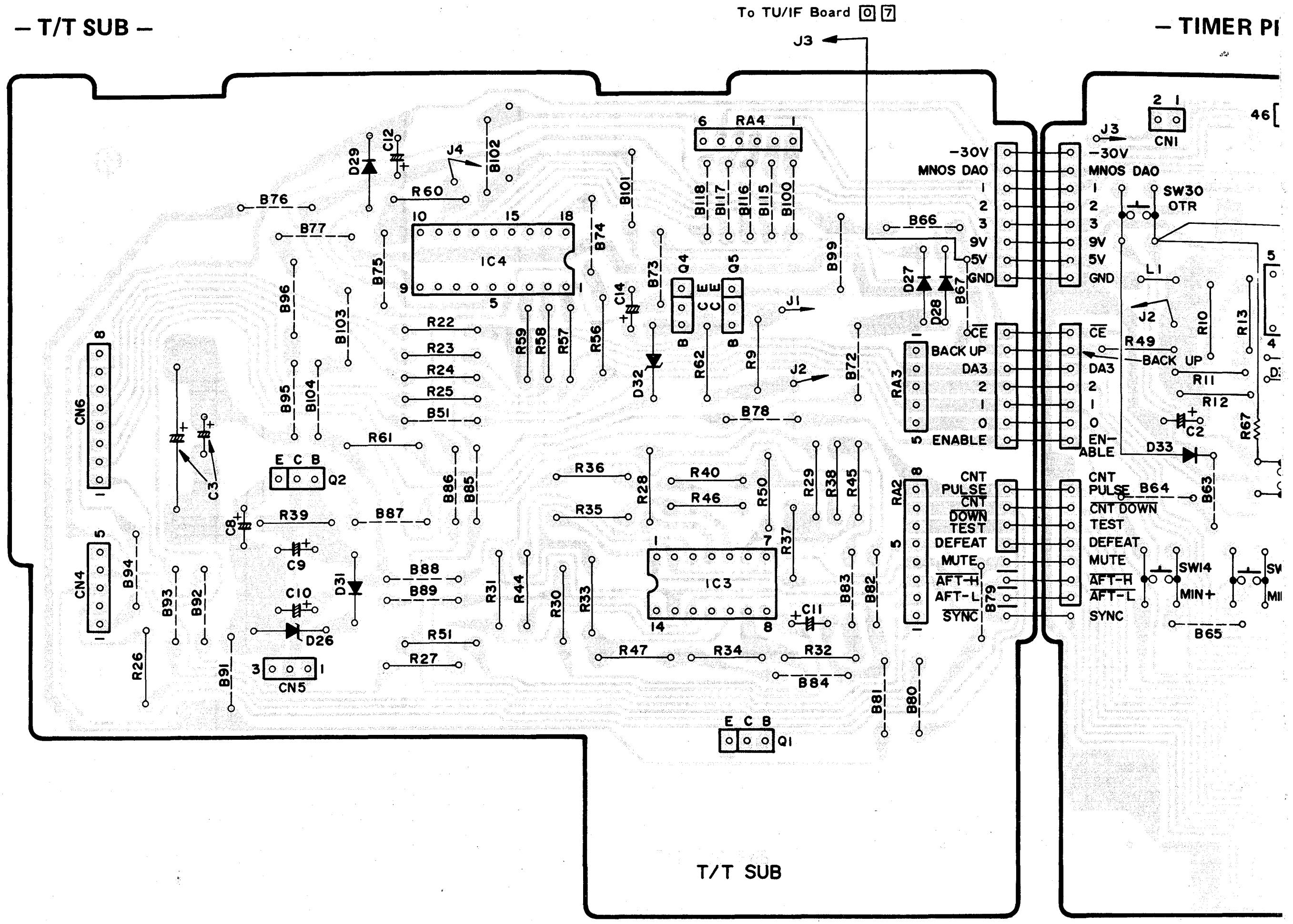


M51316P
AUDIO DRIVER
FM DET
LIMITER
ATT
S.IF DET
PRE AMP
VIF 1,2,3rd AMP
AFC
VIDEO DET
IF AGC
RF AGC
IF OUT
J801
24 DEMODULATOR
Q9 2SD637PQR
Q11 2SD637PQR
Q12 DTC144
Q3 2SB641PQR
Q4 2SD637PQR
COLOR LEVEL
VIDEO OUT
TP2
TP3
VIDEO DET OUT
CN8
12V
MUTE 2
MUTE 1
GND
CN3
VIDEO OUT
CN5
03 VIDEO
CN2
CN1
CN7
D7 MA150
Q13 2SD637PQR
AFC
Q16 DTC144F
07 TUNER / IF
CN21
UNREG SW 17V
ALL 9V
GND
SW 9V
SW 13V
POWER CTL
GND
SW 9V
04 A/S MECHA CON
INSTANT REC INHIBIT
C MEMO SW IN
CN32
CN22
22 TIMER SUB
IC2 TC4066BC or TC4066BP
IC1 TC4042BC or TC4042BP
SWITCH
D LATCH
CN222
GND
5V
CN220
CN221
TU MODE (L)
DATA 3 IN/OUT
DATA 2 IN/OUT
DATA 1 IN/OUT
DATA 0 IN/OUT
DATA ENABLE
COUNT PULSE
COUNT DOWN (L)
AC 4V
AC 4V
STEREO LED DRIVE
BILINGUAL LED DRIVE
AFC ERROR IN
SYNC DET ERROR IN
AFC DEFEAT
MUTE OUT
TU MODE (Low)
TUNING PULSE
GND
BAND SEL 2
BAND SEL 1
CN4
Q5 DTC144WF
Q6 DTC144WF
D21,D22 SLR-34VC12F X2
D23 SLR-34MC12F
TAPE RUNNING INDICATOR
Q3 DTC124F
Q1 DTC124
IC3 LM339N or UPC339C
Q2 2SD638R
IC1 UPD7519G-046
IC2 TL066CP or UPC802C
FD1
F. DISPLAY
TP1 TEST
TP2 CLOCK
TP3 GND
4.194304MHz
IC4 MN1219
SW33 COUNTER MEMORY SWITCH
SW4 CLOCK
SW8 CLOCK ADJ
SW12 START
SW16 DAY
SW20 CH SET
SW24 BAND(VL)
SW32 CH DOWN(−)
SW3 COUNT /LAP
SW7 PROGRAM
SW11 STOP
SW15 HOUR
SW23 BAND(VH)
SW27 FINE(+)
SW31 CH UP(+)
SW2 RESET
SW6 CANCEL
SW10 TV-PROG
SW14 MIN(+)
SW18 SKIP
SW22 BAND U
SW26 FINE(−)
SW30 OTR(INSTANT REC)
SW5 REPEAT
SW13 MIN(−)
SW17 STORE
CN6
CN5
TU MODE (LOW)
DATA 3 IN/OUT
DATA 2 IN/OUT
DATA 1 IN/OUT
DATA 0 IN/OUT
DATA ENABLE OUT
CNT PULSE
CNT DOWN(Low)
−30V IN
ALL 9V
GND
08 TIMER PRESETTER

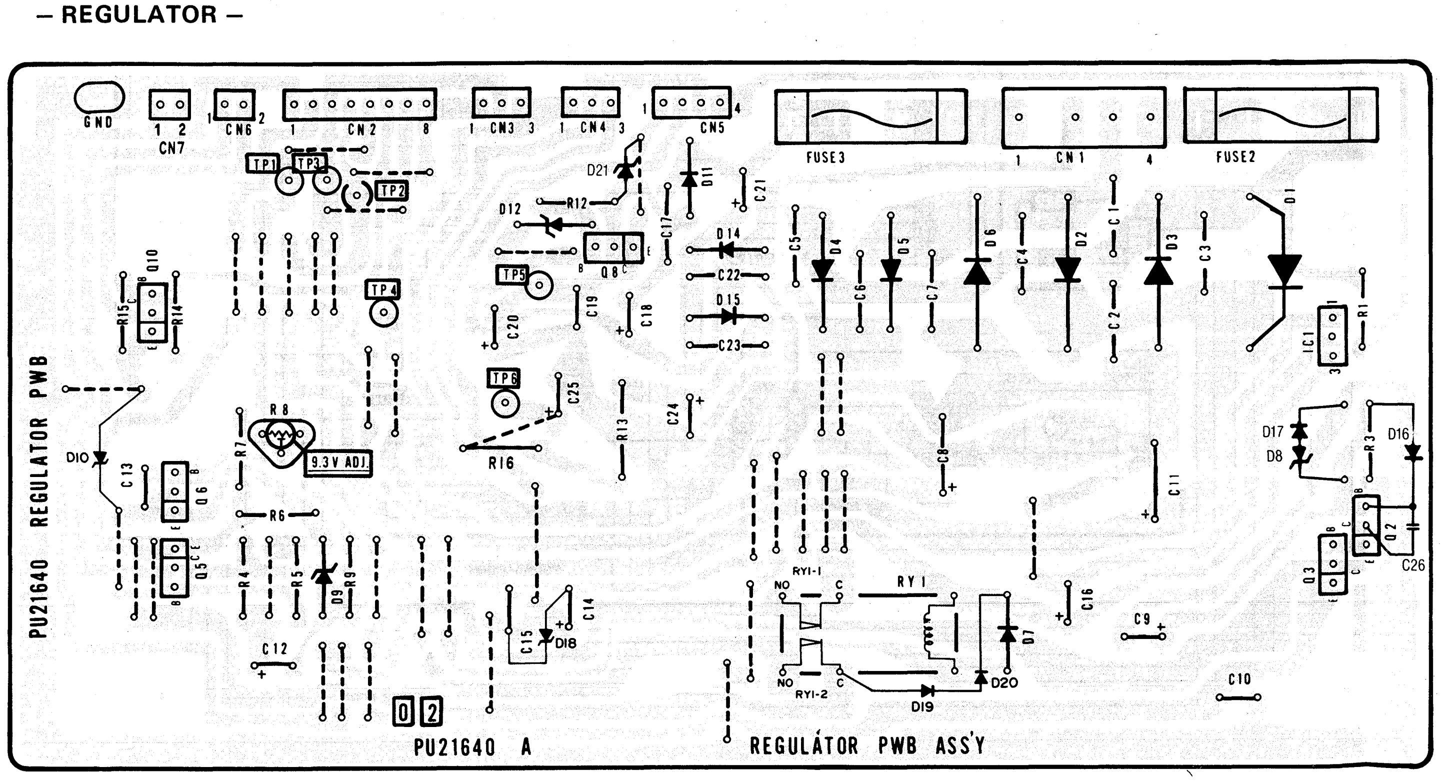
Tuner/ZF-Platte · Tuner/IF circuit board 0 7 Typ -A-


– TUNER/IF –
To Timer Sub Board
J3 0 8
JVCS75VO
TUNER
TP3 VIDEO
COLOR LEVEL
AGC
OFF SET
TP1 AGC
AFC COIL
TP2
SAW COIL
SAW1
S.TRAP
LLD
IF
MB
AFC
VL
AGC
VH
TU
UB
GND
IF OUT
IC1
IC3
0 7 T/IF PWB ASS'Y PU21667 A1
BOOSTER
RF SW PWB ASS'Y PU21667 A2 B2 C2
1 1 JVCS75VO

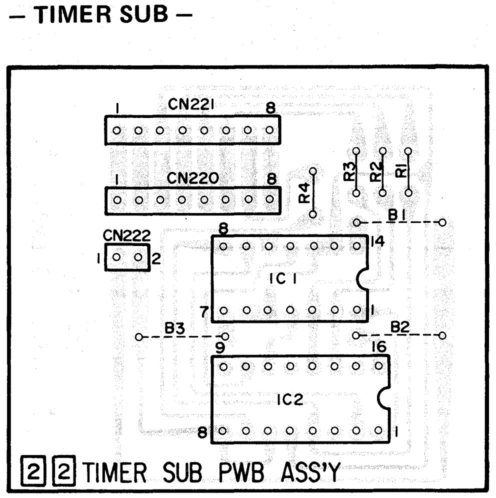
Timer/Voreinsteller-Platte · Timer/Presetter circuit board 0 8 Typ -A-, -B-

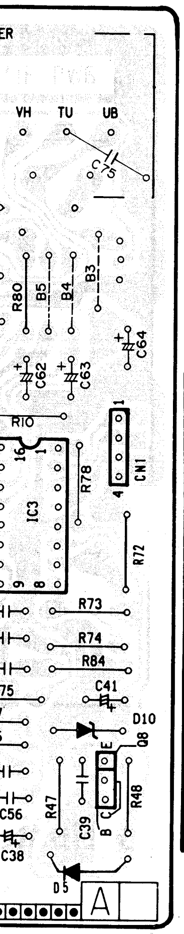

– T/T SUB –
To TU/IF Board 0 7
J3
– TIMER PI
IC4
IC3
CN6
CN4
CN5
–30V
MNOS DAO
9V
5V
GND
CE
BACK UP
DA3
ENABLE
CNT PULSE
CNT DOWN
TEST
DEFEAT
MUTE
AFT-H
AFT-L
SYNC
SW30 OTR
SW14 MIN+
T/T SUB

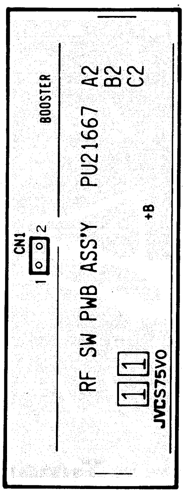
Regelnetzteilplatte · Regulator circuit board 0 2


– REGULATOR –
GND
CN7
CN6
CN2
CN3
CN4
CN5
FUSE3
CN1
FUSE2
9.3V ADJ
RY1
RY1-1
RY1-2
PU21640 REGULATOR PWB
0 2 PU21640 A
REGULATOR PWB ASS'Y

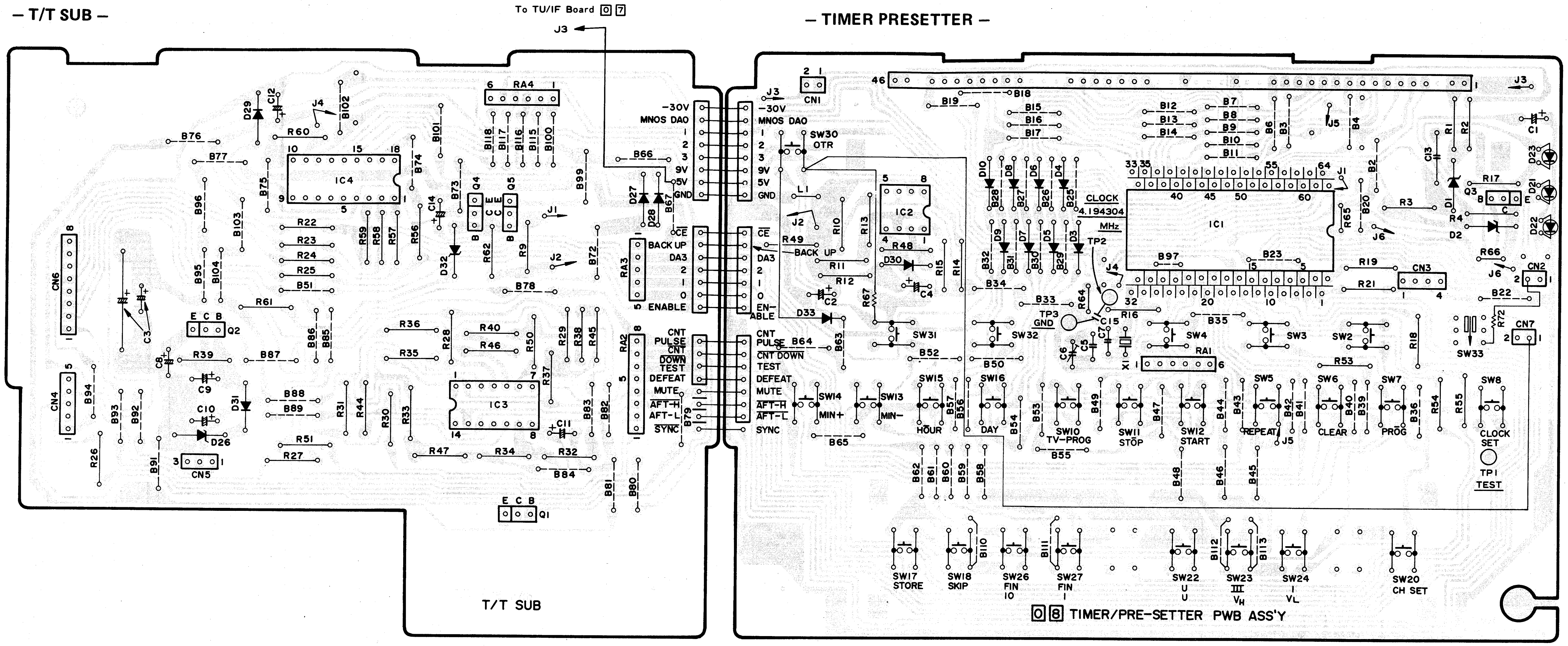
Timer-Zusatzplatte · Timer Sub board 2 2 Typ -A-, -B-


– TIMER SUB –
CN221
CN220
CN222
IC1
IC2
2 2 TIMER SUB PWB ASS'Y

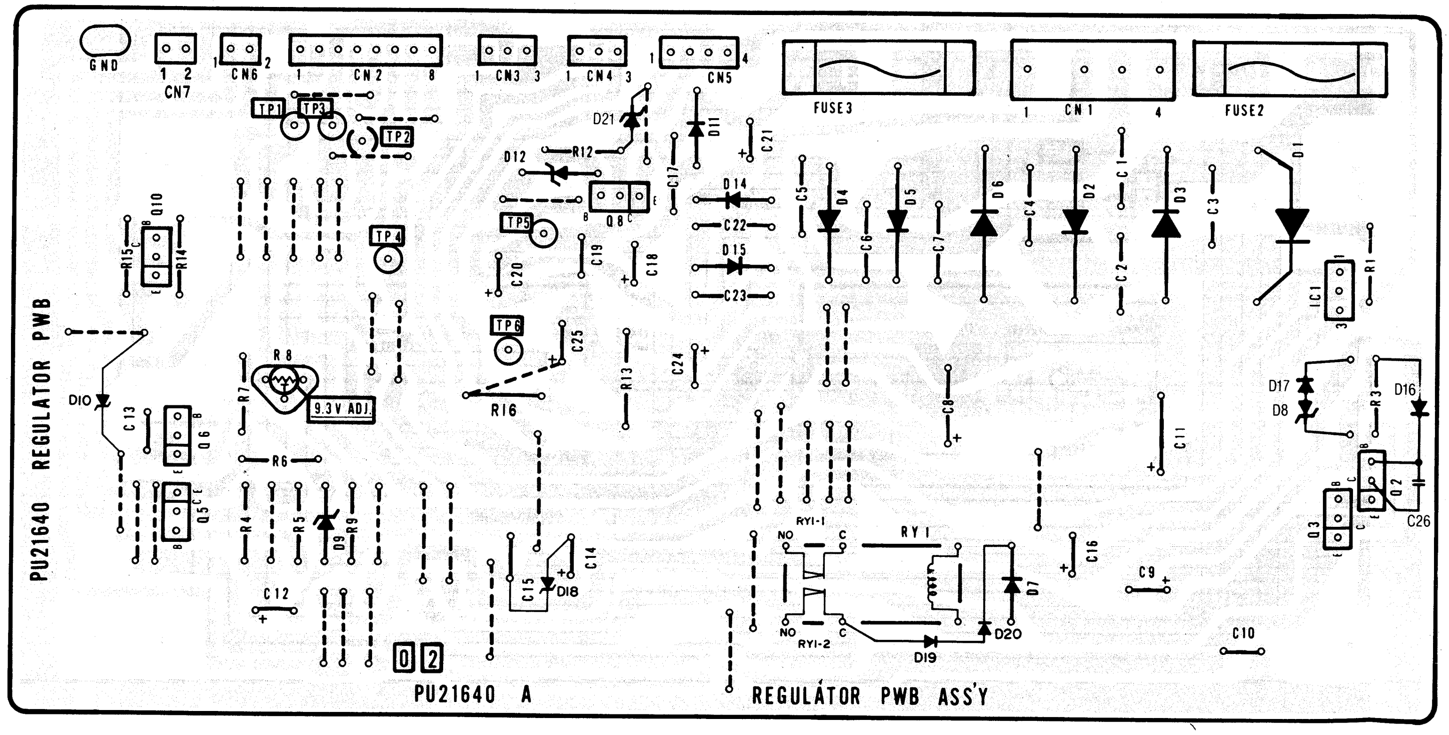

VH
TU
UB
R80
B5
B4
B3
C64
C62
C63
R10
IC3
R78
CN1
R72
R73
R74
R84
C41
D10
Q8
R47
C39
R48
C56
C38
D5
A

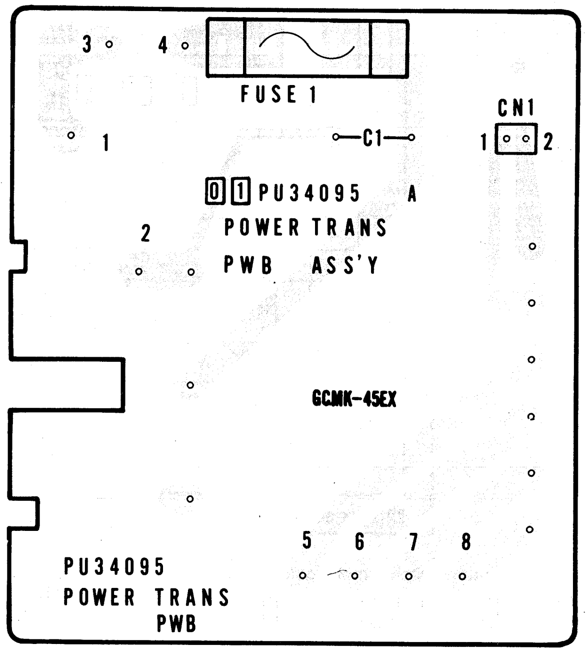

BOOSTER
PU21667 A2
B2
C2
RF SW PWB ASS'Y
CN1
11
JVC575V0

Timer/Voreinsteller-Platte · Timer/Presetter circuit board 0 8 Typ -A-, -B-

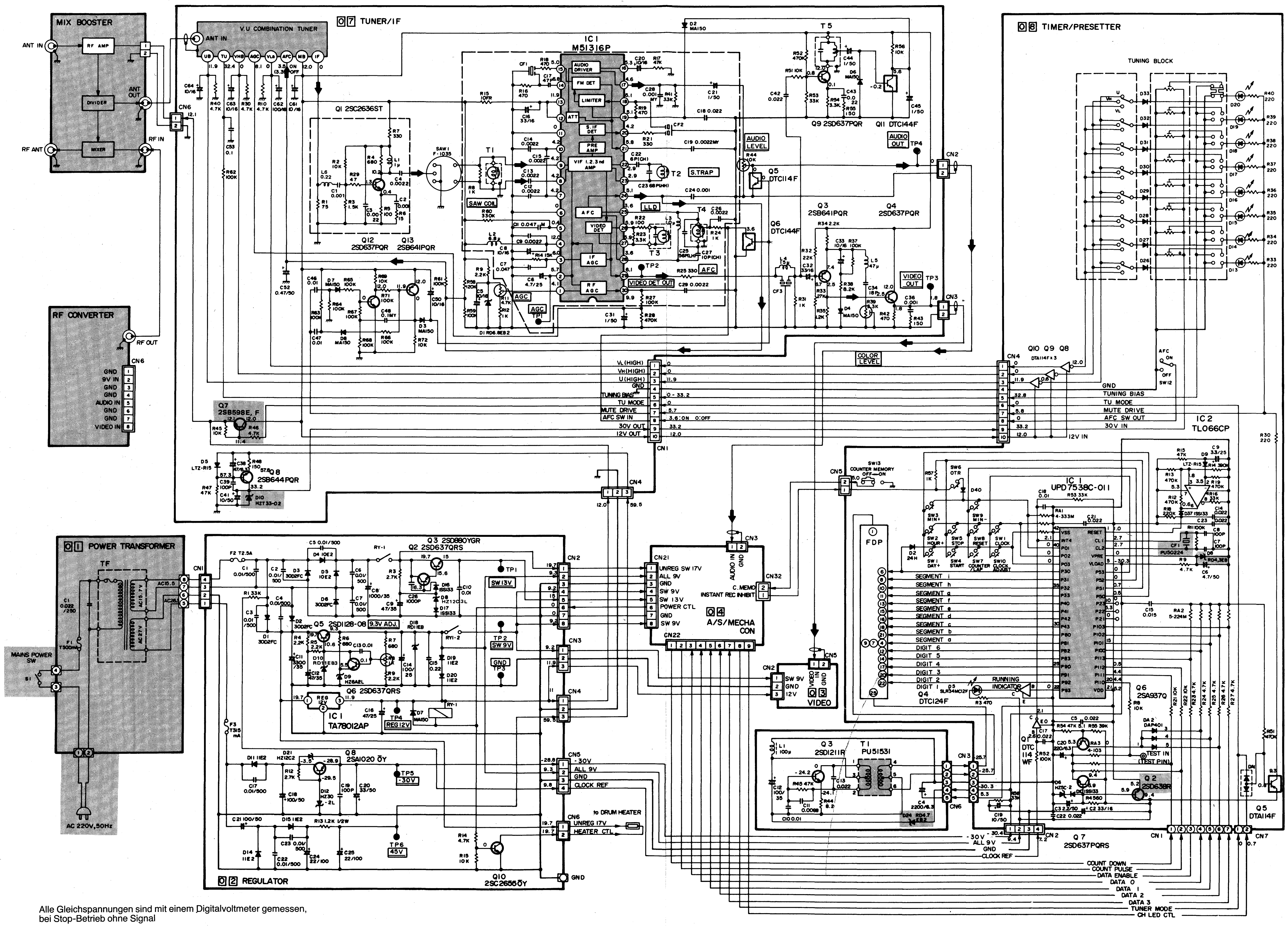

– T/T SUB –
To TU/IF Board 0 7
J3
– TIMER PRESETTER –
IC4
IC3
Q2
Q4
Q5
Q1
CN6
CN4
CN5
RA4
RA3
RA2
-30V
MNOS DAO
9V
5V
GND
CE
BACK UP
DA3
ENABLE
CNT PULSE
CNT DOWN
TEST
DEFEAT
MUTE
AFT-H
AFT-L
SYNC
T/T SUB
CN1
SW30 OTR
IC1
IC2
CLOCK 4.194304 MHz
TP2
TP3 GND
X1
RA1
CN2
CN3
CN7
SW31
SW32
SW4
SW3
SW2
SW33
SW14 MIN+
SW13 MIN–
SW15 HOUR
SW16 DAY
SW10 TV-PROG
SW11 STOP
SW12 START
SW5 REPEAT
SW6 CLEAR
SW7 PROG
SW8 CLOCK SET
TP1 TEST
SW17 STORE
SW18 SKIP
SW26 FIN 10
SW27 FIN 1
SW22 U U
SW23 III V_H
SW24 I VL
SW20 CH SET
0 8 TIMER/PRE-SETTER PWB ASS'Y

Regelnetzteilplatte · Regulator circuit board 0 2


– REGULATOR –
GND
CN7
CN6
CN2
CN3
CN4
CN5
FUSE3
CN1
FUSE2
TP1
TP3
TP2
TP4
TP5
TP6
D21
D11
D12
R12
Q8
D14
C22
D15
C23
9.3V ADJ
R8
R16
IC1
D17
D8
D16
RY1
RY1-1
RY1-2
D19
D20
C10
C9
C12
0 2
PU21640 A
REGULATOR PWB ASS'Y
PU21640 REGULATOR PWB


– POWER TRANS –
FUSE 1
CN1
C1
0 1 PU34095 A
POWER TRANS
PWB ASS'Y
GCMK-45EX
PU34095
POWER TRANS
PWB

Tuner/ZF und Timer/Voreinsteller-Schaltungen · Tuner/IF and Timer/Presetter circuits Typ -C-, -D-


MIX BOOSTER
ANT IN
RF AMP
DIVIDER
MIXER
ANT OUT
RF ANT
RF IN
RF CONVERTER
RF OUT
GND
9V IN
AUDIO IN
VIDEO IN
07 TUNER/IF
V.U COMBINATION TUNER
IC1 M51316P
Q1 2SC2636ST
SAW1 F-1035
SAW COIL
AUDIO DRIVER
FM DET
LIMITER
S.IF DET
PRE AMP
VIF 1.2.3 nd AMP
AFC
VIDEO DET
IF AGC
RF AGC
ATT
T1
T2
T3
T4
T5
S.TRAP
LLD
AFC
AGC
VIDEO DET OUT
AUDIO LEVEL
AUDIO OUT
VIDEO OUT
COLOR LEVEL
Q5 DTC114F
Q6 DTC144F
Q3 2SB641PQR
Q4 2SD637PQR
Q9 2SD637PQR
Q11 DTC144F
Q12 2SD637PQR
Q13 2SB641PQR
Q7 2SB598E, F
Q8 2SB644PQR
D10 HZT33-02
VL (HIGH)
VH (HIGH)
U (HIGH)
TUNING BIAS
TU MODE
MUTE DRIVE
AFC SW IN
30V OUT
12V OUT
01 POWER TRANSFORMER
TF
MAINS POWER SW
AC 220V, 50Hz
02 REGULATOR
Q3 2SD880YGR
Q2 2SD637QRS
Q5 2SD1128-08
9.3V ADJ.
SW 13V
SW 9V
REG 12V
IC1 TA78012AP
Q6 2SD637QRS
Q8 2SA1020 OY
Q10 2SC2655OY
-30V
45V
to DRUM HEATER
UNREG 17V
HEATER CTL
04 A/S/MECHA CON
UNREG SW 17V
ALL 9V
SW 13V
POWER CTL
C.MEMO
INSTANT REC INHIBIT
03 VIDEO
08 TIMER/PRESETTER
TUNING BLOCK
Q10 Q9 Q8 DTA114F x 3
AFC ON OFF SW12
IC2 TL066CP
IC1 UPD7538C-011
FDP
SW13 COUNTER MEMORY
SEGMENT a–i
DIGIT 1–6
RUNNING INDICATOR
Q4 DTC124F
Q6 2SA937Q
Q2 2SD638R
Q5 DTA114F
Q7 2SD637PQRS
Q3 2SD1211R
T1 PU51531
TEST IN (TEST PIN)
COUNT DOWN
COUNT PULSE
DATA ENABLE
DATA 0
DATA 1
DATA 2
DATA 3
TUNER MODE
CH LED CTL
CLOCK REF

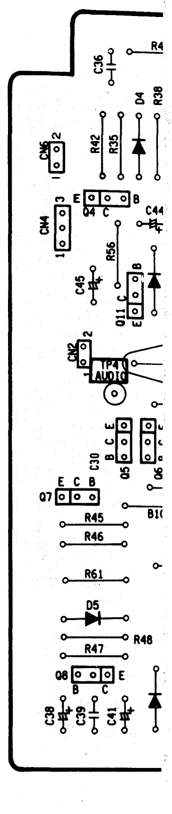
Alle Gleichspannungen sind mit einem Digitalvoltmeter gemessen, bei Stop-Betrieb ohne Signal

All DC voltages are measured with a digital voltmeter at stop mode without signal

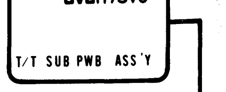
▨ Sicherheitsbauteile nur gegen Original-Ersatzteile auswechseln!

Replace safety components only with original spare parts!

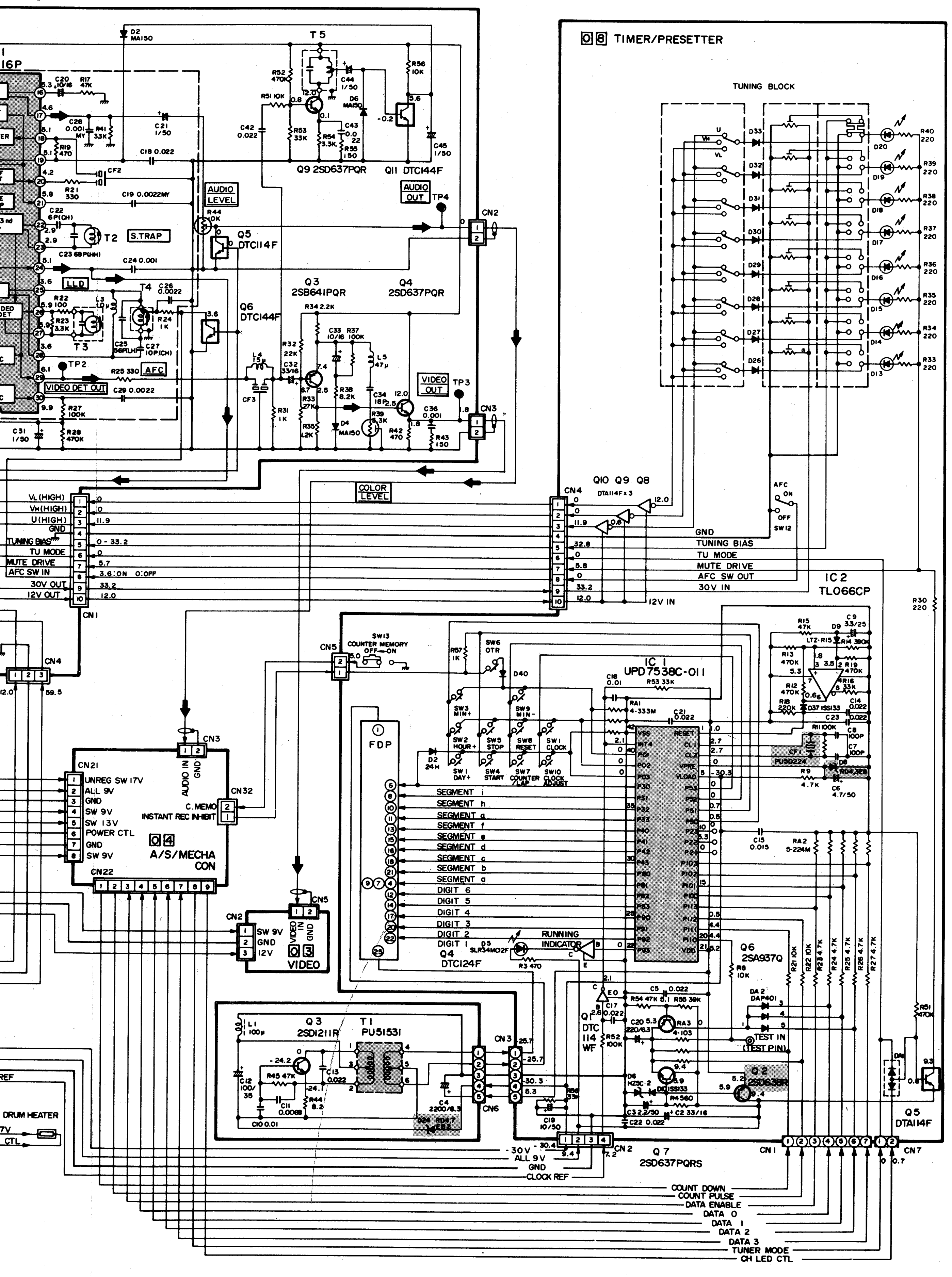
Tuner/ZF-Platte



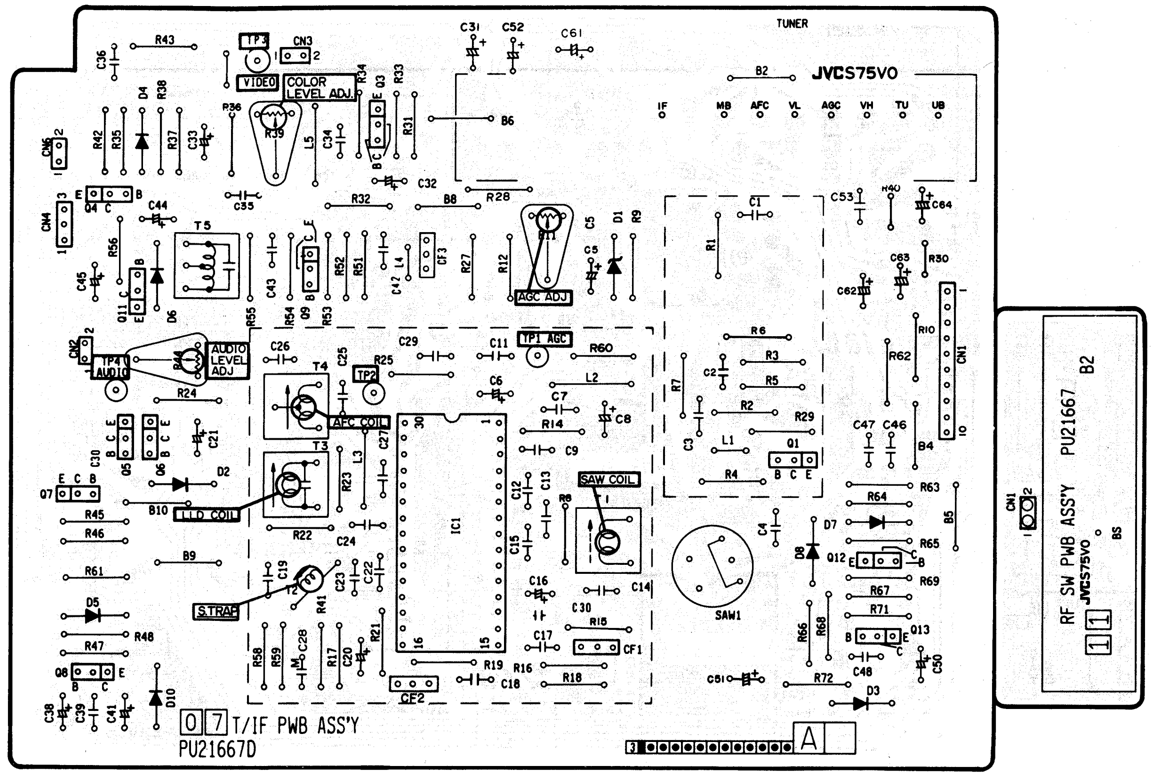
Timer/Voreinste


JVCH73V0
T/T SUB PWB ASS'Y

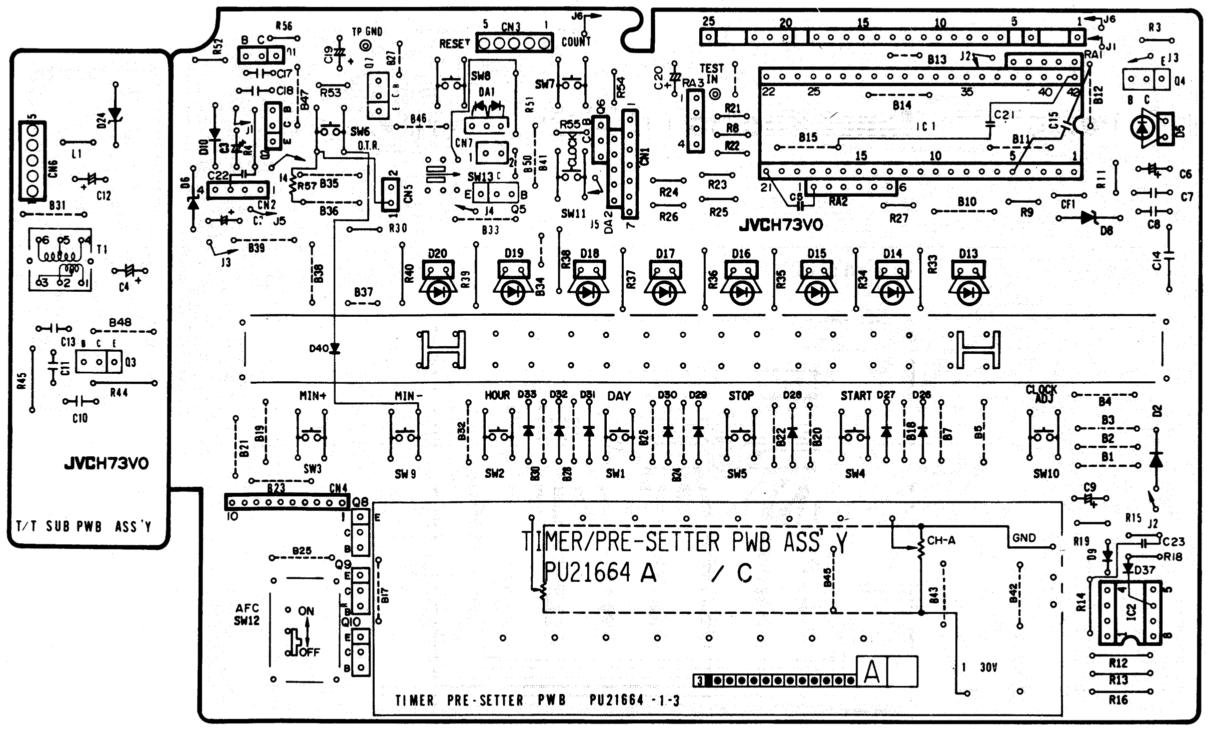
Presetter circuits Typ -C-, -D-


0 8 TIMER/PRESETTER
TUNING BLOCK
IC 1 UPD7538C-011
IC 2 TL066CP
FDP
Q3 2SD1211R
T1 PU51531
Q4 DTC124F
Q5 DTA114F
Q6 2SA937Q
Q7 2SD637PQRS
Q10 Q9 Q8 DTA114F x 3
0 4 A/S/MECHA CON
0 3 VIDEO
T5
Q9 2SD637PQR
Q11 DTC144F
Q5 DTC114F
Q6 DTC144F
Q3 2SB641PQR
Q4 2SD637PQR
AUDIO LEVEL
AUDIO OUT
S.TRAP
LLD
AFC
VIDEO DET OUT
VIDEO OUT
COLOR LEVEL
CN1
CN2
CN3
CN4
CN5
CN6
CN7
CN21
CN22
CN32
RUNNING INDICATOR
COUNT DOWN
COUNT PULSE
DATA ENABLE
DATA 0
DATA 1
DATA 2
DATA 3
TUNER MODE
CH LED CTL

Tuner/ZF-Platte · Tuner/IF circuit board 0 7 Typ -C-, -D-


TUNER
JVCS75V0
0 7 T/IF PWB ASS'Y
PU21667D
RF SW PWB ASS'Y
PU21667 B2
1 1
JVCS75V0
AFC COIL
SAW COIL
AGC ADJ
TP1 AGC
AUDIO LEVEL ADJ
COLOR LEVEL ADJ
LLD COIL
S.TRAP
SAW1
A

Timer/Voreinsteller-Platte · Timer/Presetter circuit board 0 8 Typ -C-, -D-


TIMER/PRE-SETTER PWB ASS'Y
PU21664 A / C
TIMER PRE-SETTER PWB PU21664 -1-3
T/T SUB PWB ASS'Y
JVCH73V0
AFC SW12
ON
OFF
RESET
COUNT
MIN+
MIN-
HOUR
DAY
STOP
START
CLOCK ADJ
A